The Builder.

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Parliament and Public Buildings.

WHILE our last issue was in course of printing, our legislators were in the course of a discussion, following upon a long statement by the First Commissioner of Works, in regard to the public buildings proposed to be carried out shortly, and the money to be voted for them. In one respect the statement made was of a satisfactory nature. It appeared to indicate that the long delays and procrastinations in regard to the War Office buildings and the completion of the South Kensington Museum are at last to be ended, and that something is really to be done; and we may certainly give the present Government, and the Special Committee which they appointed to consider the Government Offices sites question, the credit of having taken up the question in earnest, and brought it to a definite result in the shape of a vote in favour of their schemes by a very large majority (265 to 15). It is satisfactory to find that there does not seem to be any intention to starve the new buildings by too strict an economy. 2,500,000*l.* is the sum estimated and asked for, to carry out the new War Office, the new buildings on the Great George-street site, and the completion of the South Kensington museum. Of this, 800,000*l.* is appropriated to the last-named building, and we hope it may be augured from this that there is an intention to carry out Mr. Aston Webb's fine design pretty nearly as it stands, and not to make the museum a mere utilitarian shelter for objects of art. Of the complete sum wanted, the 2,500,000*l.*, it is promised that one million will eventually be got back by the value of the sites now occupied by the War Office Department, which will then be set free.

Mr. Akers-Douglas, in the opening portion of his statement, went once more through the history of the inconvenience and injury which the War Office has long laboured under through the manner in which it is housed in all kinds of isolated buildings, and the frequent promises of improvement which were never carried out. The history is familiar to most of our readers, and there is no occasion to make any further reference to it; but no doubt the First Commissioner, in asking for so large a sum of money, was wise in specially calling the attention of the House to the urgent necessity of the case, as far as regards the War Office at all events. It is noteworthy, too, that it is proposed to obtain the funds not by votes of the House as the money is required, but to proceed by Bill to provide the necessary expenses out of the Consolidated Fund. The advantages of this course were, as stated by the First Commissioner, that a scheme could be settled on from the first and proceeded with, the funds for it being available without having recourse to votes at recurring periods. The latter course, he observed, often led to difficulties. "The money available one year might not be forthcoming the next. A bad frost or bad weather might stop the work; the money voted the year before might not in consequence be all spent: the balance had to be handed back to the Treasury, and the money had to be re-voted in the course of the next year. Proceeding by Bill also enabled the Government to settle definitely the adoption of a scheme, and to remove it from the dangers of a change of policy, which had been so fatal to the building proposals of the Government in the past." He might well say so!

In regard to the War Office, it is obvious that the Government are determined on the Carrington House site, with all its disadvantages in regard to shape and limitation of area, and the First Commissioner evidently wished to reassure the House on this point by the statement that the site "contained an area of 75,000 square feet, which was more than was asked for by the authorities of the War Office, and which would therefore allow for any further expansion that might be required." Mr. Akers-Douglas, if his words are correctly reported in the *Times*, seems to have been under a little confusion in his mind between the idea of the area of the site and the area of the buildings which it is proposed to erect on it. The site, roughly calculating from the small block plan issued by the Office of Works, contains about 99,000 square feet. The figure of 75,000 ft. must have been arrived at by taking the block plan of the building as shown on the Office of Works plan, and deducting the spaces left unbuilt on. This is significant, because it is evident from this that the Office of Works authorities still hold to the intention of laying out the building with the small and inadequate internal courtyards shown on that plan. When a paper on the subject was read at the Institute of Architects last year, the reader of the paper produced a model which he had had made, showing the proportions of height to width which these courts would assume in a building the same height as the Home Office. That model is, we believe, still at the Institute, and a mere glance at it must be sufficient to show the cramped and insufficient nature of the site for the proposed buildings. This was so obvious that the Office of Works authorities immediately set up the reply that this block plan was only a tentative and rough scheme to show how the building *might* be arranged. We can only say that nothing was heard of this until after the reading of Mr. Statham's paper at the Institute, and the exhibition of the model, when it becmme evidently necessary to say something in excuse for such a plan. But we observe that the First Commissioner still sticks to his declaration that they have 75,000 square feet available for the War Office; and that can only be got by over-building the site, either in the way proposed in the Office of Works block plan, or in some other way. It is proposed to put more building on the site than is compatible with either the best architectural or the best sanitary results. The authorities may not believe us now; but they will believe us later on. They will find, when their proposed building is erected on that site, that they have a lofty building too closely crowded on the ground to produce the best results even for the present, and deficient in opportunity for further extension; and we are as certain of that as if we saw the building completed.

From the remarks of the First Commissioner in reply, after the discussion, we gather that the intention is, practically, for

the Office of Works to plan the buildings themselves, and then "to appoint an architect for the purpose of clothing the building." It would be impossible to imagine a more complete ignorance of what architectural design means than is implied in such a proposal. It is unnecessary to point out to our readers that the plan of a building is an integral part of the architectural conception, and that to make the plan first, and employ an architect to "clothe" it, is simply reducing architecture to the condition of a piece of external scenery. Whether the Government will find any architect of eminence ready to undertake such a part may be questioned.

The reason for this proposition is to be found in the exaggerated statements which were made by another speaker in the debate, Sir William Harcourt, in regard to the bad planning of the Home and Foreign Office. We have never defended this building; we do not think it a remarkable piece of architecture nor a well-arranged building internally. But it is not so absurdly bad in that respect as is pretended; and it should be remembered that the mission given to the architect was to make a sumptuous building, and to provide a grand set of reception-rooms; and the idea that something more than that was required in a business building did not arise in the minds of the clients themselves until the building was half finished. Then they found out that they had wanted something different, but they had never told their architect so in the first instance. Now, accordingly, it is assumed that no architect can plan such a building when he has the instructions as to what is wanted laid before him; and that it must be done for him by the Office of Works. As to Sir W. Harcourt's notions of architecture as an art we may get some idea from the fact that he cited Mr. Norman Shaw's Scotland Yard building as being no addition to the decoration of the Metropolis, and "inferior to Messrs. Crosse & Blackwell's establishment on the other side of the water." Some of these gentlemen appear to think that the fact of being a prominent partisan politician constitutes a man *ipso facto* a critic on art. Mr. Labouchere, indeed, is good enough to inform us, through the medium of the publication which is called *Truth*, that an artist is less fitted to form a sound opinion on such a point than others, "because his judgment is warped by technical trivialities," and that no architect at all events can be required for the new Parliament-street buildings, because "the exterior has only to correspond with that of the building on the right side of Whitehall, erected a few years ago": viz: the Home Office—the very building which they are all abusing: and the First Commissioner, the other day, as we have already observed, classed the new Admiralty buildings and the Scotland Yard building together on the same footing, as two structures not worthy of their position; the fact being that the Admiralty building is architecturally an absolute discredit to the nation, while the Scotland Yard building would probably be cited by a majority of architects and artists as the finest recent example of public architecture in London. What hope is there for public architecture in this country, when the management of it is to be subject to the opinions of politicians who cannot even perceive the difference between a building which is a work of art and one which is not?

ANCIENT AND MODERN INKS.

IT is frequently stated that since the mediæval ages the art of ink-making has shown decided signs of retrogression, and as evidence of this deplorable fact mention is made of certain documents written six to eight centuries ago which, when compared with many writings of less than a hundred years of age, show far greater legibility and a more perfect degree of preservation.

It is probable, however, that the inferior ink has come into use during the last few centuries, not so much through ignorance concerning the manufacture of more permanent ink, as through the desire to employ an ink which would not deteriorate by settlement, and which would, by more perfect fluidity, be more conducive to rapid writing than the ancient inks.

Vitruvius, Pliny, and Dioscorides each mention ink as containing soot or lamp black mixed with some mucilaginous fluid, and although even in their day a dye was also sometimes added, there appears to be little doubt that the legibility of ancient records is due to the use of carbon as the basis of the ink; and that when, towards the close of the mediæval period, the element carbon began to be discarded altogether as an ingredient of ink, the fading of manuscripts became more rapid.

Many years ago an ink receptacle was found at Herculaneum which contained a small quantity of ink. Upon examination this proved to be composed simply of lamp-black mixed with a thick oil, and it is supposed that this is the description of ink which was used for writing upon papyri at the time of the destruction of Herculaneum.

Such ink must have required frequent stirring, and the writing was probably performed with a fine brush. "The lamp black," says Underwood, "was ground up with the oil as painters' colours are now done, and by remembering this, we can understand the meaning of Demosthenes when, in a speech of his, he taunts his great rival, Æschines, for having been compelled in his youth, through poverty, to sweep the school, sponge the benches, and grind the ink."

The rapidity with which carbon settles out from the liquid in which it is suspended, and the poor fluidity of a mixture of carbon and mucilaginous liquid, prohibit its use for modern commercial purposes; there is evidence also that writers in the early centuries endeavoured to replace it by some more convenient substance, for Mr. Astle, the author of a book published towards the close of the last century, mentions that he possesses a parchment roll requesting prayers for the Countess of Oxford, who died in 1199; this roll contains certificates from many of the religious houses, flourishing in England at that time, and it is observed that whereas some of them are as black as if recently written, others are brown, and some of a yellow hue.

The extract of gall-nuts, or other tannin matter, in combination with an iron salt, which forms the basis of most black writing inks of the present day, was in use many centuries ago, but it appears to have at first been mixed with soot or lamp-black, which, however, seems to have gradually been discarded. The blue-black inks of the present day consist generally of this tannate or gallo-tannate of iron suspended in water containing gum, and mixed with indigo or some similar colouring matter.

Coloured inks, consisting probably of vegetable extracts, were known to the ancients. The Sacrum Encaustum was a purple ink, and a green ink was reserved by the Greeks for State purposes. The coloured inks of to-day are frequently simple solutions of aniline dyes; but logwood and other vegetable dyes are still used to a considerable extent. A somewhat remarkable production of the present age is the preparation of a fireproof ink with a platinum salt for its basis, to be used in conjunction with a fireproof paper composed largely of asbestos.

Before leaving the subject of writing-inks, mention must be made of the changes which have taken place in the manufacture of paper during modern times, for the quality of the paper largely influences the permanency of the ink. The parchment skins which were formerly used for writing upon were far superior to our modern paper, so far as preservation of the written record is concerned; even the old unbleached paper was superior to the modern bleached and glazed material, for small quantities of chlorine and lime always remain in the paper, and apparently exert a detrimental effect upon both paper and ink in the course of time. The result of using wood pulp for paper making may already be seen in many books, in which the paper has turned to a brown colour, and become so brittle that it may be broken into small pieces by merely crumpling it in the hand.

The ink in use at the present day by the draughtsman for drawing purposes appears to be very similar to that formerly used for ordinary writing purposes. In this country it is most commonly known as "Indian ink," although it appears to be most extensively manufactured in China, several factories for preparing the ink being in existence at Shanghai and other parts of the Chinese Empire. To this day it is often used as a writing ink in China, Japan, and other Asiatic countries, a small brush taking the place of a pen.

This ink is merely a mixture of carbon and gum, with the addition of a small quantity of musk, or Borneo camphor, to give it the characteristic peculiar odour. But the preparation of this simple ink is by no means easy, for unless the materials are of the finest quality and the carbon as finely divided as it is possible to obtain it, an inferior ink will result. At the same time, there are no extraordinary properties about genuine Chinese ink, as Europeans have been able to manufacture ink equal in quality if not superior to that which comes from the Far East; the chief drawback to European ink is that the European manufacturer is apt to seize upon the first opportunity of substituting cheaper raw materials, whereas the tendency of Chinamen is to remain *in statu quo* throughout eternity.

After the carbon and gum have been mixed, the product has to be slowly and carefully dried. The moulding of the sticks is effected in moulds engraved on the inside with Chinese characters, such as the well-known dragon, &c., and the gilding is performed with gold-leaf. The high polish of the sticks is said to be produced by brushing them with a hard brush impregnated with tree-wax. A good sample of Chinese or Indian ink is fine-grained and homogeneous

throughout, does not deteriorate with age and will produce lines of perfect regularity of tint.

THE LONDON TELEPHONE SERVICE.

THE conference of Local Authorities held last week at the Guildhall, to discuss questions relating to the telephone service of London, was a complete success, and all the motions were carried unanimously. In order to understand what led up to this meeting we have to recall the recent unsuccessful appeal by the late Commission of Sewers to prevent the National Telephone Company from laying their wires underground in the City without giving a definite promise of reducing their charges. Whilst the sympathies of nearly every one were with the Commissioners, yet there was considerable force in the National Telephone Company's retort that it was hardly reasonable to complain about the efficiency of the telephone service, and yet to refuse underground way-leaves to the company when they were doing their utmost to improve it. The real ground for the action of the Commissioners was, of course, that they did not feel justified in quietly giving a joint stock company leave to interfere with the City streets without any security for the interests of the public. These interests are secured by statute before permission is given to tramway and electric lighting undertakings, and it is manifestly not right that permission should be given to telephone companies unless under conditions which would protect the public.

After the failure of their attempt to prevent underground wires being laid by the company, the Corporation of the City of London wrote to ask the Treasury to hold an inquiry on the cost and efficiency of the telephone service in London. After some official correspondence, Mr. Hanbury finally replied that he regretted that the Treasury could not accept the authorities of the City as speaking for the whole metropolitan area. The City Corporation then invited delegates from the various local boards and vestries in this area to the conference referred to above. The invitation was largely accepted, as thirty-six out of the forty-one local boards sent delegates, and twenty-five of them intimated that they had also applied to the Treasury for an inquiry into the cost and efficiency of the telephone service in London.

The letter from Mr. J. S. Forbes, the president of the National Telephone Company, read at the meeting, admitted that the present service left much to be desired. He, however, attributed this solely to the fact that the Local Authorities in London did not give the company those reasonable facilities without which it was impossible to bring the service to its highest efficiency. We think this explanation very far-fetched. A much more probable explanation would be that the commercial policy pursued by the company in the past has been very short-sighted. As General Webber pointed out two or three years ago, at the Institution of Electrical Engineers, the haphazard system of extension adopted by the company has led to the deplorable result that London, considering its size, is the worst telephoned city in the world, and is not likely to be much improved in our lifetime. Mr. Forbes also laid great stress on the fact that the company was subject to a Government tax of 10 per cent. on its gross receipts from exchange business, and to charges for way-leaves amounting to a very large annual sum.

We were sorry that the subject of long distance telephony was not considered more fully at the meeting. The recent enormous growth of this system makes it of national interest. Between many of our large towns, at the present moment, some three or four thousand conversations are averaged every day on the telephone, and as the great majority of these conversations are on matters relating to business, it will be seen what a great help the telephone can be made in facilitating commerce. The long-distance telephones are managed by the engineers of the Post Office, and the local telephones by the National Telephone Company, and although we have Mr. Preece's authority for saying that they work "hand and glove together," yet this is no great satisfaction on days when the local service is bad. Some people, too, think that it is hardly dignified for a Government department to place itself at the disposal of a private company.

While we fully recognise the shortcomings of the present London telephone service, we are yet compelled to admit that it is a great deal better than it was ten years ago. The London Corporation has never played a dog-in-the-manger policy, but is perfectly willing to grant permission to the Company to use the streets of the City on terms and conditions that would protect the public. The following motions, which were passed unanimously at the meeting, seem to us to give a very fair statement of the case and to indicate a line of action which will probably prove beneficial to the many users of telephones, and ultimately also to the shareholders of the National Telephone Company.

"1. That in the opinion of this conference of Delegates representing the Corporation of London, and the Vestries and Local Boards in the metropolis, the present telephone service in London is both inefficient and costly.

2. That in the opinion of this Conference an inquiry should be held by the Treasury as to the cost and efficiency of the London Telephone Service, and all matters relating thereto, agreeably to the request of the Local Authorities of London.

3. That copies of the foregoing resolutions be forwarded to the Treasury, the Corporation of London, the London County Council, and the Vestries and Local Boards of the metropolis."

NOTES.

Elementary Education.

AN interesting and useful debate took place in the House of Commons on Wednesday last on the subject of elementary education. It was based on a motion of Sir John Lubbock's, to the effect that three class subjects should be permitted to be taken up. At present there are what are called four class subjects, namely, geography, elementary science, English, and history. In the English schools only two of these may be taken up, but in Scotland three is the permitted number. The chief interest of the debate arose from the fact that there was a general agreement that elementary education in England was behind that of Scotland and Continental countries, and that one difficulty in the way of better education was the religious difficulty. With that we have nothing to do in these columns, but there can be no doubt that every effort should be made to bring up the elementary education of the country to a higher level, since upon it must be based any satisfactory system of secondary and technical education. As regards the motion before the House of Commons, it received no practical answer; for the permission to scholars to take up three subjects does not oblige them to do so. It would be possible in schools of high class to take up three subjects, while those of lesser capacity would keep, as at present, to two subjects. The great thing to be aimed at is to allow scholars as much freedom of choice as possible.

Calcium Carbide and Acetylene.

A PAPER on this subject was read before the Institution of Civil Engineers, on the 15th inst., by Mr. Henry Fowler. The author stated that acetylene gave the most brilliant light of all gases. Under suitable conditions 5 cubic feet gave 240-candle power, but for small consumptions this value was not obtained, and ordinary burners became clogged with soot. This latter defect could be overcome by the use of an injector burner, which, however, required a higher pressure. The highest value of acetylene, burning one cubic foot per hour, was forty candles. Numberless devices, said Mr. Fowler, had been invented for generating acetylene, but its application was more dependent upon its cost than upon the apparatus used in its manufacture. Acetylene has been used for lighting at the Salford Docks of the Manchester Ship Canal, and for lighting a station on the Great Southern and Western Railway of Ireland. The acetylene flame has a high actinic value, and causes light colours to appear lighter and dark colour darker than when exposed to sunlight. The gas, when inhaled, causes suffocation, but has been shown to be no more dangerous in this respect than coal gas. Calcium carbide has now been reduced to 16*l.* per ton when sold in quantity, and at this price acetylene can compete with coal gas at 2s. 6d. per 1,000 cubic feet when a light of not less than thirty candles is required, and the comparison is made with coal gas burning through ordinary flat flame burners.

Insurance, and the Workmen's Compensation Act.

IN a paper which was read on March 17 before the Insurance Association of Manchester, by Mr. C. H. Green, Assistant Secretary of the Sun Life Assurance Society, the relative merits of mutual societies of employers for their protection, and of insuring with insurance companies, are considered. It need hardly be said that Mr. Green makes out a good case in favour of doing business with the companies. We are inclined to think that employers will find this method the best, more especially as it appears from Mr. Green's paper that there is already considerable competition among insurance companies for this new class of business. Moreover, there is always this to be said, that if employers think that they can improve their position by combining in mutual protection societies they can always do so, and this possibility will tend to prevent the rates of premiums from rising too high. No class of business men are more alive to the needs of the times than are managers of insurance companies

and we may shortly expect to see the rates of premiums published.

The Henley Railway.

THE Bill for the proposed railway from Marlow to Henley-on-Thames will not be proceeded with. This announcement our readers are probably already acquainted with. But the terms in which the General Manager of the Great Western Railway made the decision of the Directors public showed a singular want of appreciation of what we believe is the public feeling in regard to the Thames Valley. The latter has now become—if we may use the expression of a river and its surroundings—one of the playgrounds of England. It is as necessary that it should be kept free from invasion by a railway as if it were a common. Railways, no doubt, will have to tap it, but they must be so constructed as to keep out of the valley except at the point of termination. Moreover, it is obvious that the officials of the Great Western Railway were anxious to make the river at Henley easily accessible, so that excursionists might be brought there. It is certain that nothing would so much depreciate the value of property in the Thames Valley as railways which enabled masses of people to be poured into it for day excursions. It is not, and never can be, a holiday resort, like a seaside place; what property owners desire is that it should be essentially a residential neighbourhood. This implies that it is sufficiently easy of access to those who are able to enjoy the Thames in an intelligent and quiet manner. The excursion steamers which from time to time during the summer are encountered are a sufficient warning as to what the valley would be if excursion trains poured their hundreds on to the banks of the Thames.

Albert-gate, Knightsbridge.

IT is stated that the French Government have bought for 25,000*l.* the house, on the gate's east side, which during many years past has been the French Embassy. That house and the one on the west side of the gate were built by Thomas Cubitt; the eastern house was purchased from him for 15,000*l.* by George Hudson, the "Railway King," who died twenty-seven years ago. They stand on the sites of the Cannon Brewery and the "Fox and Bull," originally the "Fox," tavern. The sign of the latter, blown down in 1807, is said to have been painted by Sir Joshua Reynolds. The ground was bought by the Crown of the Dean and Chapter of Westminster; on April 6, 1842, the road was made into the Park; the gates were erected in 1845. The piers carry two stags, modelled after prints by Bartolozzi, and formerly at the Ranger's Lodge, Green Park, designed by Robert Adam, 1768, and pulled down in 1820. It is said, too, that the French Government will acquire the houses that stand between the Embassy and Holy Trinity Church, and build a ballroom, a banqueting-room, and other additions to the present house. The church, designed by Brandon & Eyton, occupies the site of a district chapel rebuilt in 1699, which has been the hospital chapel of a lazar-house appertaining to St. Peter's Convent, Westminster. The hospital chapel was converted by Laud, when Bishop of London, into a chapel-of-ease to the parish of St. Martin-in-the-Fields, within which it was then situated. In July, 1766, John Rhodes published his survey of Kensington, &c., made to an unusually large scale, and engraved by George Bickham, giving an interesting view of the ground.

Sewer Ventilation.

THE ventilation of sewers by means of inlet-grates at the street level and high extract-shafts has been advocated for many years, and now appears a pamphlet entitled, "The Sanitary Problem from the Sewer-gas Point of View," which gives the results of tests on two systems of sewerage "ventilated" on this principle, and which is intended to prove that this method of ventilation is a farce. The tests were made at Fulham by Mr. J. P. Norrington, A.M.Inst.C.E., and at Sutton (Surrey) by Mr. A. D. Greatorex, A.M.Inst.C.E., and certainly show that at these places the inlets as often as not act as outlets, while the shafts act sometimes as inlets, at other times as feeble outlets, and again are of no service either way. The subject is certainly a difficult one, as the direction of the air-currents is influenced, not only by the motion of the sewage, the direction and force of the wind, and the difference in temperature between the air of the sewer and the external air, but also (and this important factor is not considered in the tests now referred to) by the hygrometric condition of the air within and without the sewer. The pamphlet has been written and compiled by a gentleman interested in a process for rendering "sewage in transit inodorous and innocuous," and thus removing the necessity for high ventilating shafts—a most laudable object, and one which, we may hope, will one day be realised. But when we think of other patentees who have made similar claims, we must suspend our judgment for the present on this new process.

Proposed Improvements at Leeds.

WE learn that there is talk of building new Law Courts for Leeds, the courts in the Town Hall being insufficiently provided with accessory departments and waiting space, while the space they now occupy is much wanted for more accommodation in connexion with the municipal work of the Town Hall. We are also glad to see, in an article in the *Leeds Mercury*, a strong expression of opinion in regard to the wretched and unworthy surroundings of the Town Hall. "Standing in the square," says the Leeds paper, "we have on one side a triumph of modern architecture; on the other there has been allowed to remain what would discredit many a colliery village." We drew special attention to this point in our article on Leeds in the *Builder* of December 19, 1896; and we are glad to see that the inhabitants of the town are beginning to realise that something ought to be done.

Sanitary Condition of Lancaster.

FROM Dr. Theodore Thomson's report to the Local Government Board on epidemic measles in the borough of Lancaster, it appears that in this case the origin of the disease cannot, as in the majority of localities reported on, be traced to any definite insanitary condition of the town, though this is not all that could be desired. Dr. Thomson says:—

"The town may be regarded as consisting of an older portion, which lies around and at the base of the eminence on which Lancaster Castle stands, and of a newer portion spreading from the older on all sides, but extending more especially in a southerly direction. The older portion of the town shows not a few instances of houses huddled together in a fashion depriving them of proper light and air-space; while the back streets and yards are often indifferently paved, and less clean than is desirable. In the newer parts of Lancaster, on the other hand, the above conditions—air-space, light, paving, and cleanliness—are distinctly superior to those in the older parts of the town. Working-class houses in newer Lancaster have usually two rooms and a scullery on the ground floor, and two or three bedrooms on the upper floor; in older Lancaster, accommodation in houses of this class is scantier. The prevailing system of excrement disposal is by water-carriage, the town being sewered throughout. House refuse is stored in brick ashpits, and is removed periodically by the Town Council as Sanitary Authority. The town has a public water supply, derived, it is said, from the Millstone Grit of Wyre Fell, some nine miles from Lancaster."

St. George's Church, Botolph-lane.

STEPS have been taken, under the Union of Benefices Acts, for uniting the parishes of St. George and St. Mary-at-Hill, and for pulling down the church of the former. A report upon the fabric was made in pursuance of the City of London Parochial Charities Act (46-7 Vict., c. 36) for the Charity Commissioners by the late Ewan Christian, who advised that 2,700*l.* would be necessary for its restoration, and the church has since been closed. It was built by Wren in 1673-4, at a cost of 4,509*l.*, and presents some striking characteristics of his City churches—a well-proportioned tower, 16 ft. square at base, rising from the ground, in three stages, to a total height of about 85 ft., and having a cornice and a dead-panelled parapet with angle-piers capped with vase-shaped pinnacles. In the lowermost stage is the door; the second stage has a round-headed window beneath a square cornice; square openings, with louvres, pierce the belfry-stage. The church's east end has a central angle-pediment, the basement story is unbroken by either doorway or window; Corinthian columns, two on each side, widely-spaced, divide the nave from the aisles. The church, which was repaired in 1836 and in 1884, measures 54 ft. by 36 ft. and is 36 ft. high. On the sword-iron was affixed a plate inscribed to the memory of William Beckford, twice Lord Mayor of London, who died June 21, 1770. At the Dissolution the rectory passed from Bermondsey Abbey to the Crown; since the Great Fire the parish has been united with that of St. Botolph, Billingsgate. The neighbouring church of St. Mary-at-Hill was reinstated at a cost of 3,980*l.* by Wren, who repaired the tower and walls. Much of the fabric was rebuilt of brick, *circa* 1775, but Wren's east front remains. The interior, which had four Italian Doric columns, and cupola, was remodelled by James Savage, who also built the rectory-house: 1848-9. Five years ago a large quantity of human remains were removed from the vaults and re-interred in Norwood Cemetery.

Saint Pierre, Montmartre.

THE "Vieux Paris" Committee is occupied at present about the ancient church of Saint Pierre, Montmartre, the restoration of which has been put into the hands of M. Sauvageot, Architect to the Commission des Monuments Historiques. The result of the architect's investigations, so far, is that the apse and the other portions of the edifice date from the twelfth century, but that the small chapels of the apse have been built on the

substructures of a more ancient church. No vestige of the Roman temple of Mercury, which is known to have once occupied the site, has been found, beyond the existing four marble columns, of which two are built into the piers of the apse, and two others placed against the first piers of the nave. Further investigations are to be systematically made during the work of reparation. It is to be feared, however, that whatever the "Commission" may discover, they will not leave much of the ancient church of Saint Pierre, if we are to judge by the manner in which they have "repaired" other ancient monuments in France.

The Portrait of Mr. Penrose.

WE have not had an opportunity of seeing Mr. Sargent's portrait of the last President of the Institute of Architects in such a light as to judge of its colour effect, but there can be no doubt that as a piece of characterisation in portraiture it is a remarkable success, and is one of the best of the series of portraits of its Presidents which the Institute possesses. It has always been an evident object with Mr. Sargent, in his portraits, to lay hold of some characteristic attitude or expression in his sitter, and make that the keynote of the picture, and in some cases he has exaggerated this tendency in too dramatic a manner; but with Mr. Penrose he has been very successful; he has caught the ex-President's eager and alert look in listening to the discussion of some point of interest to him, and produced an exceedingly real and living likeness. We may take the opportunity of adding that the subscriptions hitherto received do not cover the exceedingly moderate price which Mr. Sargent has asked for his work, and the Secretary would be glad to hear from any members who are disposed to add their names to the list.

Ancient Use of Heraldry.

MR. CRACE, in his paper on "Heraldry" at the Institute, instanced the cartouches of the Egyptian kings as samples of excellent drawings of a heraldic character. But he omitted to point out that these cartouches were not heraldic in intention, in the sense that our badges are. They were parallel in their use, in their sigillographic general form, and in the ideographic nature of their component characters, to the "nien-hao" of ancient China and of Japan, and in the last respect only do they resemble our heraldic badges. It is, perhaps, in their use that the greatest distinction is noticeable; they were, like the "nien-hao," not intended to be *worn upon the person*. This wearing upon the person is (or was while heraldry remained a living and necessary science) a vital feature distinguishing heraldic bearings from every other sort of device. The systematic use of personal badges and distinctive crests existed (with perhaps a few isolated exceptions) only among those people who habitually wore closed helmets; it was originated for the purely utilitarian purpose of labelling its wearer. The word "crest" is, of course, here used in the heraldic sense only. It may be remarked here that in Japan, the only eastern country where men of rank fought in vizored helmets, the use of personal crests and badges developed into a general and officially recognised system, just as in Europe, and the principle of simple and expressive drawing insisted on by Mr. Crace was always observed.

The Vienna Exhibition.

PREPARATIONS for the Jubilee Exhibition at Vienna are busily advancing. It is to be opened on May 7. There are more than a hundred buildings, great and small, each apparently being designed by a different architect. Thus we have the "Pavilion of the Town of Vienna" (Drexler Brothers architects); that of the Commission of Commerce (von Förster); of the Government of Bosnia and Herzegovina, in the Oriental style, prominent in appearance and colour; the Bakery Exhibition, in German Renaissance, with arcades, &c. (Fellner and Helmer); and many others too numerous to mention. At each corner are to be great crystal "Jubilee pillars," which at night are to be lit with electric lights placed inside them.

Jumbomania at the Paris Exhibition.

PROFESSOR JAN ZAWIESZKI, the architect to the theatre at Cracow, has perhaps reached the *ultima Thule* of extravagance, even in a design for a Paris Exhibition. He proposes, at the Exhibition of 1900, to have a great spherical iron building, 100 mètres high, completely swathed in masses of water falling from the top. It is to be in three orders—Tuscan, Renaissance (whatever that may be), and Ionic. Though the whole of the outside is to be surrounded with water, the inside is to be quite dry, so that visitors wander at their will without the fear of wet feet. We do not gather from the published description how, in entering the palace, they are to get through the wall of water without being wet through. Inside is to be a theatre of varieties, the inevitable restaurant, the equally inevitable big wheel, and a dancing saloon. At night the falling water is to be illuminated with coloured lights, which will, no doubt, be very effective.

Cast Iron.

A PAPER is to be read at the Society of Antiquaries on May 12, entitled "Sussex Castings," to prove that the rediscovery of the process, supposing the ancient Greeks were actually acquainted with it, was made in Sussex. The cast iron industry seems again coming into favour, and is to be well represented at the Art Metal Work Exhibition; the Coalbrookdale, the Carron, the Falkirk, and other notable firms having taken spaces. This is very well as long as people will comprehend and bear in mind the character and the limitations of cast iron in regard to artistic treatment, and not attempt ornamental design of a kind which cannot possibly be done justice to in cast work.

Cheap Statues for Beverley Minster.

THE Suffragan Bishop of Beverley writes an amusing letter in the *Times* of Wednesday, recounting the good feeling of the inhabitants of Beverley, Massachusetts, in subscribing the price of two of the modern-mediæval statues which are being affixed to Beverley Minster. The sum, it appears, for which two statues are produced is 35*l*. Whether vacant niches in a mediæval building should be provided with modern statues is an open question; it depends to some extent on circumstances; but there can be no doubt that if it is done, the statues should be the work of the best sculptor's art of the day, only assimilated in line and general style into a certain harmony with the mediæval architecture. But we should like to know what kind of statues are being put up on Beverley Minster at 35*l*. a pair? The price tells a tale. They must be executed and charged, we should imagine, as mason's work: or perhaps they are made by machinery. At all events, it is impossible that the hand of an artist can be in them—unless the artist is being drastically plundered.

East Ham Public Offices Competition.

WE observe that the District Council of East Ham advertise a competition for new public offices, with liberal premiums attached to it, but with the intimation that "the Council will probably be advised by a professional referee in the selection of the plans." Why "probably"? Surely that is a point on which they can make up their minds, and ought to do so, if they wish competitors to have confidence in them. Architects are not likely to give their time to a large work like this on the strength of the statement that there will "probably" be a professional assessor; a phrase which may mean nothing whatever, and leaves the Council at full liberty to act without an assessor if they choose.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

HERALDIC DRAWING AND ITS ADAPTATION.

A MEETING of this Institute was held on Monday, at No. 9, Conduit-street, Regent-street, the President, Professor Aitchison, R.A., occupying the chair.

The minutes of the last meeting were taken as read, and the Earl of Stamford having been introduced to the meeting,

Mr. Woodward inquired whether any communications had passed between the Council of the Institute and Her Majesty's Office of Works with reference to the designs for new Government offices in Whitehall?

The Chairman replied that the matter was wholly confidential, and he was therefore unable to give information on the subject.

On Mr. Woodward requesting that a note of the communications which had passed should be published in the next issue of the "Journal," the Chairman observed that it was hardly in the power of the Council to do so.

Portrait of Mr. Penrose.

The Chairman said he would call upon their distinguished Honorary Associate, Mr. Alma Tadema, who was so well known, not only to that assembly, but to England and to the world, to unveil the portrait of their past President. They had had the good fortune to get Mr. Sargent to undertake to paint the portrait, and it was one of the very finest works that the Institute possessed, although they could boast of the works of the late Mr. J. P. Knight, Mr. Boxall, Mr. Frank Holl, Mr. George Richmond, Mr. Phillip, Mr. Ouless, Mr. Orchardson, and Mr. Alma Tadema himself, who did them the honour of painting one of their Presidents.

Mr. Alma Tadema said he considered it a great privilege to be called upon to unveil the portrait of a man whom he esteemed so highly, painted by another whom he did not esteem less. He had taken the liberty, and he should continue to do so, of calling Mr. Penrose "our Athenian." Mr. Penrose had pointed out that there was life in the straight lines of Greek architecture, and it was appropriate that his portrait should be painted by a painter who shewed us that there was life in the lines of the brush.

Mr. Tadema then unveiled the portrait of Mr. Penrose.

The Chairman said that it was his duty to say a few words about their past President. He was one of those men who had conferred dignity on their art, not only by his talent and knowledge, and the advances he had made in the theory of architecture, but also by his extreme devotion to the great

science of astronomy. Plato, in one of his dialogues, complained of architects as people who falsified realities; that instead of making the lines of things as they ought to be, they infused all sorts of delicate soft curves, which took them out of the category of realities. However, not being a philosopher he could only say that he was extremely thankful to those delicate sensibilities that the Greeks displayed, making things so exquisite that the Parthenon was like one of the works of nature, which one could look on for ever without getting satiated or disgusted. There were passages in Vitruvius which had bothered all the annotators since the time when the codex was re-discovered till the time of Wilkins, the great architect who built the National Gallery Uiver. Coll. and so many other fine buildings in this country. Before his time none of the annotators had the least idea of what Vitruvius meant. Guliani had an idea that the curves were made to bulge outwards. Mr. Wilkins had read the passage aright, that it had been observed by the Greeks that long straight lines when looked at from above were hollow, and that when they were above the eye, they looked as if they sank in the middle. Wilkins, with an honesty which was perhaps not common in a discoverer, remarked that he had examined all the principal buildings of antiquity, but he had never observed this curvature. The fact was that all the straight lines in the Parthenon—all the lower lines—were encumbered with ruins; and Pennethorne, who was a great authority on architecture, happened to be at Athens shortly after this discovery of Wilkins, and the stylobate and the steps, being less encumbered than they had been before with fragments, set to work, with the small appliances he had at his disposal, to see whether these theories of Vitruvius were borne out by the facts, and he found they were. But he neither had suitable instruments nor was the whole place clear. There was a great controversy about this, and Mr. Penrose offered to go, and the Dilettante Society, to whom they owed so much for publishing works on Greek architecture, furnished him with the means of going out with his instruments; and with his knowledge of architecture, and with his mathematical attainments, he showed for all time that these delicate curves, and all these peculiar variations which make the Parthenon so beautiful to look on, existed It was mentioned in the newspapers that Dr. Galton stated—he did not know on what ground he based the opinion—that he believed the Greeks were as superior to the present inhabitants of Europe as the inhabitants of Europe were to the negro. Be that as it might, Vitruvius said that the sense of hearing amongst the Romans was much less acute than that of the Greeks, and that they were obliged to use Greek terms, because many of those variations in music were so slight that they could not be appreciated by Roman ears. He did not know a more eloquent description of the buildings at Athens than that given by Ernest Renan. He went out there, and said that he had often heard and read and dreamed of perfection, but he never saw it until he went to Athens. That showed that one of the great literary men of the day was capable of judging of the extreme elegance, carried to the last pitch of refinement, which the Greeks were enabled to reveal. They would all be glad to have amongst this excellent collection of pictures the fine work of Mr. Sargent. He was sure that everybody must be grateful to him for giving so admirable and striking a portrait of their late President, with all those refinements which so marked the man of science and the man of art.

Mr. Sargent having briefly returned thanks,

A vote of thanks was accorded to Mr. Alma Tadema for unveiling the portrait.

Mr. Woodward remarked that Mr. Pennethorne, so closely identified with the discovery of the optical refinements in Greek architecture, was Mr. John Pennethorne, the brother of the architect, Mr. James Pennethorne.

Mr. J. D. Crace then read a paper, entitled "Heraldic Drawing and its Adaptation," of which the following is an abstract:—

Mr. Crace said that in the drawing of heraldic devices, one leading principle applied—the necessity of recognising what has to be said, and how to say it simply and directly. The heraldic device was intended to appeal, not to the sensibilities or emotions, but to a simple intelligence, to be rapidly understood. The eagles, lions, roses, or fleurs-de-lys of heraldry were not to be thought of as pictorial illustrations of the animal or vegetable creation, but as symbols. The conventional or symbolic representation of the heraldic "charge" conveyed certain limited information at a glance. Heraldry had been described as "out of date," "antiquated nonsense," but modern equivalents for the heraldic "ordinaries" might easily be found. The effigies painted on tavern sign-boards showed at once the name and purpose of the house; the colours of the jockey's jacket conveyed distinct information; flags, whether for signalling or for distinction, were heraldic. The lecturer cited instances of the ease with which facts about people dead centuries ago could be learned from the heraldry displayed on relics associated with them which had come down to the present day. In decorative heraldry, whether architectural or other, extreme clearness of expression is required; the more so that frequently the examples are distant from the eye, or in positions where other forms more important to the composition must be so rendered as to claim the first attention. The details have also sometimes to conform to cramped and difficult spaces.

Allusion was made by the lecturer to the close relationship between the symbolic design of heraldic charges, and the less direct forms used in expressing ideas by writing. Looking back to the remote times of Egyptian art, each of the kings and queens of the various dynasties could be distinguished by the "cartouche" bearing the symbols of that sovereign. That "cartouche," repeated on the cornice of a temple, was almost as heraldic as the shield repeated on the cresting of an English monument, and its object was virtually identical. The animal devices used as symbols on Egyptian monuments of 3,000 years ago had never been surpassed, and should be well studied by the heraldic draughtsman. Though used to convey the sense of words or sounds, they were also used to convey certain information even when writing came into general use. For monumental purposes the well-recognised symbol conveyed the idea more promptly. It is of primary importance that the object representing the idea should be so drawn as to be promptly recognised; and the art of conventionalism is the art of selecting the most characteristic points, leaving details to be filled in or not, according to circumstances.

Having shown under what conditions it was permissible to multiply or omit details, and when "naturalism" or fanciful treatment might be indulged in, provided the object represented was as far as possible unmistakable, the lecturer went on to speak of heraldic draughtsmen of the last fifty years who had successfully grasped the problem of sound conventional drawing as applied to heraldry, selecting for mention the names of those deceased—Willement, Pugin (some of whose original drawings for the heraldic glass in the Houses of Parliament were exhibited in the Meeting-room), John Powell, James West, Clement Heaton, and William Burges, all in their several ways real artists. So far as heraldic art was concerned, Pugin was *facile princeps*. In point of design and arrangement his heraldic glass at Westminster was without equal. The lecturer then dealt with the relations between the helm, the crest, the wreath or torse, and the mantling, describing and explaining the origin and purpose of the various parts, and some methods of treatment.

Touching heraldry abroad, the Germans, he said, had always maintained a love for heraldic device; and the principal front of the new Parliament House in Berlin is ornamented with two fine heraldic panels, in which the shields are combined with sculpture of very high artistic merit.* In Spain heraldry was freely used for the decoration of architecture—there were notable examples at Burgos and Toledo. Magnificent cloths of State, embroidered with the arms and badges in gold and colour on silk or velvet grounds, were also in use in Spain. Such decorations, the lecturer considered, might be introduced into municipal and other public ceremonials in our own days. A really fine heraldic cloth would make a much more imposing background to a Royal or municipal group than the extemporaneous and tawdry finery ordinarily the expedient on such occasions, and the cost, in the long run, be less than what is now expended spasmodically on temporary rubbish. As examples of the valuable decorative effect of heraldry in architecture, the lecturer instanced the blazoned shield in the boss at the intersections of rib-vaulting, or on the hammerbeam of a timber roof, or in some of the high chimney-pieces illustrated in Mr. Gotch's paper. Having summed up the essentials necessary to good heraldic designing, the lecturer, in conclusion, read some notes furnished for the paper by Mr. George W. Eve, author of the recently published work on "Decorative Heraldry." These touched upon the influence of architecture on heraldic designs in book-plates, perceptible from the very earliest examples; the value of the panel as a basis of design, as shown in the works of Sebald Behem, Virgil Solis, and others; the extensive use of architectural details in the armorial work of Albert Dürer and his school, and in the elaborate compositions of Jost Amman; and the modifications in treatment the armorials have undergone by the influence of the sculptures and coats-of-arms represented in high relief.

Mr. J. A. Gotch, in proposing a vote of thanks to Mr. Crace, observed that it was a far cry from the Parthenon to the drawings they saw upon the walls—from the mathematical niceties of the Greek building to the infinite variety of line which they saw around them in that room—and yet one of the most suggestive things which might be noticed was the wide interest that attached to all architectural subjects. There had been of late years a considerable spread of the desire for heraldry, and for the use of heraldry. Whether heraldry was native to the nineteenth century, with all our pushing ways and our commercial aspirations was, to his mind, a question; but, at any rate, there was an increased desire for heraldry, and it was most desirable that architects should be in a position to draw heraldry well. The interest of heraldry, to his mind at any rate, did not consist, as it did to some, in the multiplicity of quarterings. That appeared to him to be a vain desire of self-gratification. It consisted in the beautiful rendering of the simplest forms of family arms, so that they did not get a mass of unintelligible decoration such as Mr. Crace mentioned, but they did get a design which was suitable to the place it occupied, and which was easily read at a distance. Of course, they were now, as they always had been, largely in the hands of the officials of this particular form of art, namely, the Heralds College, and it was with very great satisfaction they saw what greatly improved methods were being followed in that institution. Some ninety years ago the kind of arms which they granted were absolutely impossible of decorative interpretation. When they had an elaborate battle scene, how could they represent that, with its vast amount of detail, decoratively? Or again, if they had the well-known instance of the threepenny piece on which a gentleman had contrived to represent the Lord's Prayer, and which was such a singular event in his life that when he had a coat of arms granted to him, that formed the principal charge; how could they possibly represent the Lord's Prayer in the size of a threepenny piece in a decorative manner? So that they were really very largely in the hands of the Herald's College in this respect: but he was very glad to know that many officials there had not only a desire for better forms, but the ability to present them, and in the course of time he imagined, when the control of these things evolved and developed in high places—because after all it was those in high places in the institution who actually gave the official design in the matter—they would get even greater improvements than they had at the present time. There was one quality of heraldry which was necessarily inherent in it, and that was vigour, because the whole of heraldic living creatures belonged to the male sex. They never saw a lioness, for instance; they always saw lions. The only female animal—if female animal it could be called—represented in heraldry was a mermaid; and Spenser drew the distinction between things which were mortal, imperfect feminine, and things which were perfect, immortal, masculine. There was another aspect of heraldry which was also of considerable interest, and that was how to impart interest to commonplace objects. Of course, they might say it was comparatively easy to draw an interesting lion or an interesting pig. One of the designs by Pugin, which was illustrated in Mr. Crace's paper, was a pig of a most interesting kind. But when one had to draw a porridge-pot, or to draw a wheel even, the thing was not quite so easy; and in illustration of the way that difficulty was got over—in one instance at any rate—they had that Spanish cloth before them, and in the lower

* See *Builder*, August 10, 1895.

quartering, on the left-hand side, was the wheel represented in perspective, and represented in a very simple and striking and a very graceful manner; and to represent a wheel in perspective would not strike one at first sight as being a very easy thing to do in anything but a very commonplace manner. With regard to the mantling, there were several examples on the screen which showed the system of which the old designers availed themselves. They always recognised that mantling had two sides of different colours, and in the strips into which they divided their mantling they twisted it and turned it so that the white and the other colour balanced each other in a satisfactory manner, and that was an important thing to remember in dealing with mantling in heraldry. Then with regard to book plates, there had been a vast number of these designed in recent years, and there had been a very considerable tendency, owing to the facility with which they had found these plates could be designed, to rather sacrifice the first object of a book plate to the secondary object of making it beautiful. The first object of a book plate was that the name of the owner should be at once intelligible. Now in many of the book plates the name had been really the last thing one was able to ascertain. The man's occupation, or his favourite hobbies, have been portrayed —things which, of course, were of interest to him, but not necessarily of interest to the world at large, and his name possibly had been found in some obscure corner after a great deal of hunting. That seemed to the speaker to be departing from the real heraldic spirit which was necessary to be preserved in book-plates. With regard to what Mr. Crace had said about the way of treating heraldry, it was useless, or even harmful, whether in ornament or heraldry, to multiply detail where it was itself lost and confused the form, and that the best design was that which best fulfilled its purpose as a design—with that he thought they must all thoroughly agree. Throughout his paper it seemed to him that Mr. Crace had struck the right note with regard to heraldic design, and that in the present day, if they followed the advice which he gave, they would be able to design heraldry which would be not at all a copy of mediæval heraldry, but quite distinct, and yet peculiar, as it were, to the nineteenth century, and having as much vigour and as much interest as anything which had gone before it, and that could only be obtained and achieved by doing as Mr. Crace had said, by becoming thoroughly familiar not only with the elementary laws of heraldry, but also with the anatomical forms of the animals and the objects which had to be portrayed.

Mr. W. H. St. John Hope, in seconding the vote of thanks, said he hoped on a future occasion Mr. Crace would embark further upon the question of heraldry, especially that portion of it which related to badges and their treatment. There were some very good examples of badges placed for their edification upon screens, and in English heraldry the artists of old times revelled in their treatment of badges. Those who had been fortunate enough, as he had been, to read many old wills, inventories, and other documents, considered by some people to be musty, could not fail to have been struck with the very full way in which badges were used by way of decoration on church vestments, altar cloths and hangings, and in every possible place in domestic work, from the great hangings of the hall to the pavers of the floor, on the carvings of the wainscoting, in the glass, and on the bosses of the roof. Pugin was one of those who in recent years realised that to the full, and some of the panels exhibited, which he supposed formed a portion of a series of Royal Arms and supporters, when taken singly did duty perfectly well for badges, and there were other examples of them in the cartoons. In other drawings they saw how badges were used in places to form an important part of the design. Mr. Crace had made very just remarks as to the shocking way in which artists disregarded the proper treatment of crests, helms, and mantlings, and to that list he thought might be added the treatment of coronets. He did not think it was quite the fact that coronets were restricted to persons of noble rank, because many of the drawings on the walls showed that persons who were mere knights used coronets on their helms for the crests to rise out of, and a study of ancient seals would show that even esquires did the same thing. These coronets were, however, treated with an infinite variety which was utterly foreign to the modern artist, who had no other idea of a coronet than the wretched things which were drawn for him in books of reference, whereas a very slight reference to ancient authorities showed that coronets were treated with the utmost freedom. There was a beautiful seal, for instance, of the Lady Margaret Beaufort, who founded St. John's College, Cambridge, in which her coronet was partly formed of fleurs-de-lys and roses, and even when it came to such simple things as crosses and fleurs-de-lys, the mediæval artists were able to make beautiful things of them. The other day he was shown a design which emanated from a school of art in the provinces, in which a Royal Crown formed the principal part, but the fleurs-de-lys were as poor as could be seen, and the crosses were perfectly contemptible. Probably it was not his fault. He had not studied old examples, and was not aware that as the old men played all sorts of games with their heraldry, so when it came to such details as coronets they did the same thing. If any one wanted to see a grand specimen let him look at those gorgeous crowns which surmounted the badges in King's College Chapel, Cambridge. Each one of them a masterpiece in its way; no two alike, and yet each one a Royal Crown of England. Parti-coloured fields played a part in some of the drawings used by Mr. Crace. A reference to old documents brought to one's mind that the hallings, as they were called, that is, the hangings round the hall, were very often built up of a series of striped fabrics powdered all over with badges, and made to look very splendid. He hoped Mr. Crace would give them a further edition of heraldry from that point of view, because he was eminently capable of reproducing on paper the heraldic furniture referred to in old documents, and showing what beautiful things they were, and their entire applicability to modern requirements.

Mr. W. A. Lindsay, the Windsor Herald, said that although by no means an authority upon the question of descriptive heraldry, he could admire what others explained so well. His chief reason for speaking was that he thought the lecturer and Mr. Gotch unwittingly had been rather hard upon the College of Arms, for though in the last century, no doubt, absurd grants of arms had been made, it should be recollected that whatever faults the then members of the College of Arms committed were chiefly due to their assenting too readily to what the public asked for. For instance, a coat-of-arms which he had often contemplated with horror represented that very great and distinguished gentleman, the late Sir James Scarlett, with two supporters, one a black Lifeguardsman's horse, and the other a Lifeguardsman in red. But no herald ever designed that coat of arms and supporters, and it must have been done at the earnest request of Sir James himself. He had himself been asked to propose arms which he considered as objectionable, and had refused; but it was not always possible when dealing with a public body, to altogether refuse to do what the public body asked. When heraldry was used for minor forms of decoration, such as book-plates, he regarded decoration as the principal object instead of being a mere accessory, for he must altogether demur to the observation that the name of the person to whom the book-plate belonged should be made a prominent object in the book-plate.

The Chairman thought that heraldry was one of the most becoming subjects that could be treated of in an institute of architects, for Addison, in his mistranslation of Marshall's advice to a man who was anxious to bring up his son to a lucrative employment, says,

> If of dull parts the stripling you suspect,
> Make him a herald, or an architect.

Mr. Wm. White said that as he understood it, it was quite a modern invention to introduce the name at all. The names which appear beneath the banners in the "National Record" of the Knights of Windsor did not appear on shield or crest of those who fought in tournament or battle in the days of old. The difficulty which was caused by the ill representation of heraldic forms, heraldic devices, and heraldic principles, had arisen from the absolute neglect of the school of heraldry, as was a little while ago the case with the school of architecture; and the only way to revive a true knowledge of heraldry was by popular lectures and explanations, so that people might understand what heraldry really was.

Mr. Crace, in returning thanks, said that he entirely agreed with Mr. Gotch's view that vigour was a very essential element in heraldic drawing, and he was very glad that Mr. St. John Hope had called attention to the importance as a distinct subject of that division of heraldry which came under the head of badges—a subject quite deserving of an article by itself. The decorative use of badges was very extensive, and was often perhaps more easy to apply than more absolutely heraldic forms. Parti-coloured backgrounds and striped hangings might also very well occasionally occupy the attention of those who were concerned with internal decoration. In reference to the remarks of the Windsor Herald he would say that in his paper he had endeavoured to avoid any appearance of criticising the Herald's College otherwise than as sharing with the general public that decadence of taste from which not even the Royal Institute of Architects had been wholly free, and he hoped that if the Windsor Herald had the patience to read his paper afterwards he would find that he had specially remarked that the College of Arms only shared that lapse of taste which was somewhat conspicuous during the first half of the present century, and not altogether unknown in the second half. With reference to Mr. White's remark about the use of the name with the shield being a modern invention, he was afraid that view could not be supported, for there were in that room a selection from the Windsor stall plates, and so far from being a modern invention, it would be found that the very oldest of these stall plates had not only the arms of the distinguished persons who were made Knights of the Garter, but their very distinguished names were in a great number of cases, though not in all, under the arms themselves.

The Chairman announced that the next meeting would be held on the 4th prox., when M. G. Harmand, Avocat à la Cour d'Appel, Paris, would read a paper on "Artistic Copyright."

The meeting then terminated.

THE SURVEYORS' INSTITUTION.

AN ordinary general meeting of this Institution was held on Monday in the temporary premises of the Institution, Savoy-street, Victoria Embankment, when Mr. Harvey M. Grellier read a paper on "Tithe Rent-Charge Recovery." The paper does not come within our province to report.

THE CENTRAL ASSOCIATION OF MASTER BUILDERS OF LONDON.

AT a meeting of the Council of the Central Association of Master Builders of London, held on the 21st inst., at the offices, 31, Bedford-street, Strand, W.C., Mr. Benjamin J. Greenwood (Messrs. Holliday & Greenwood) was unanimously elected President of the Association in succession to Mr. Wm. Shepherd, whose year of office had expired. Mr. Thomas Gregory and Mr. Charles Wall were re-elected, and elected vice-presidents respectively, and Mr. H. H. Bartlett (Messrs. Perry & Company) was elected treasurer.

A vote of thanks to Mr. William Shepherd for his services during the past year terminated the proceedings.

COMPETITIONS.

ALTRINCHAM (CHESHIRE) PUBLIC OFFICES.—In the competition for this building, to cost 4,000*l*., twenty-six architects sent in designs. The Council appointed Mr. John Ely, President of the Manchester Society of Architects, as assessor, and his award gave the first place to the design "Vox Populi," by Messrs. Chas. A. Hindle and H. Davenport, of Monton, near Manchester. The second place was given to "Altrincham," by Mr. J. Macnamara, of Altrincham. Before opening the assessor's award, the Council passed a resolution deciding to adopt the design placed first. This is an excellent procedure, and would give confidence to competitors if more generally adopted. The designs are to be exhibited in public.

PROPOSED CIRCUS, YARMOUTH.—It is stated that the British Circus Syndicate, Limited, having provisionally secured a site in close proximity to the Drive, at Great Yarmouth, will shortly proceed with the erection of a circus building, to seat between 2,000 and 3,000 persons. The architects for the building are Messrs. Bottle & Olley.

Sketches of London Street Architecture.—No. XXIV. The Freemasons' Tavern, Great Queen-street. The late Professor Cockerell, Architect.

SKETCHES OF LONDON STREET ARCHITECTURE.—XXIV.

THIS is an example from an earlier period of the century than the other modern street buildings of London which we have illustrated, and represents the taste of another generation, but it deserves recognition as the work of an architect of exceptional ability and accomplishment in regard to the modern application of Classic architecture—the late F. P. Cockerell, and is in itself a very well-proportioned and dignified piece of Academic design.

ENLARGEMENT OF RUGBY CONGREGATIONAL CHAPEL.—Messrs. Linnell & Son have secured the contract for the extensions at the Congregational Chapel at Rugby. Accommodation will be provided for about 160 additional sittings. Mr. J. T. Franklin is the architect.

THE MUNICIPAL CONTROL OF BUILDINGS.

AT the Carpenters' Hall, London Wall, E.C., on Monday evening, Dr. Longstaff, L.C.C., lectured on "The Municipal Control of Buildings." Sir Arthur Blomfield, A.R.A., presided.

The lecturer said the difficulties in the way of municipalities attempting to control build-

ings depended upon a great variety of circumstances. In London and other old cities they arose from the extremely complicated conditions which had been inherited from bygone days. He would undertake to draw up the most perfect Building Act that the wit of man could devise for a prarie city. In beginning to build a city to-morrow, as was often done in America, they would be easily able to foresee the exigencies that would arise, and to draw up rules that would meet them. Take the difficulties which beset London. No two streets were laid out on the same principle, nor were used in the same way by the community. One might be devoted to private residences, and another to business purposes, and those business purposes might be varied—warehouses, factories, shops, counting-houses, and offices, all having different requirements and being differently circumstanced. Since the larger proportion of our population had become dwellers in towns, our responsibility as members of a community had increased. A striking instance of what happened when there was no municipal control of buildings occurred in Liverpool, when, in the forties, there was an enormous development in the woollen industry in the West Riding of Yorkshire and in the cotton trade in Lancashire. This led to an immense migration to Liverpool of people from the country districts. The Irish famine followed in 1847, and so great was the influx of immigrants from across St. George's Channel that in Liverpool, as well as Glasgow, there grew up large Irish colonies. These people had been accustomed to live in hovels, by which they suffered but little inconvenience, seeing that they were engaged in such healthy occupations as farming and fishing, which kept them in the open air all day. When these people arrived at Liverpool they were not particular in what sort of dwelling they lived—they went into anything they could find. But the conditions of existence in Liverpool were far different from those in Ireland; hence it became a most unhealthy city. Their rapid influx led to the building of what was curiously called the Scotland ward of Liverpool. The lecturer, by a sketch on the blackboard, illustrated the principles upon which this quarter was originally built. He showed that small back-to-back houses were built round close courts with large privy middens in the centre, without any regard being given to the necessity for light or air. The buildings, on the whole, formed a shocking example of what builders could do when uncontrolled by by-laws. Putting aside the year—1849—of the cholera epidemic, when the death rate was over 60 per 1,000 of the population, the lecturer pointed out that for ten years the death rate averaged 36 per 1,000—an enormous mortality. By-and-bye the Liverpool Corporation woke up to the fact that their city was at the top of the list of unhealthy towns, and made superhuman efforts to get rid of the slums which abounded, or rather which comprised the Scotland ward. They spent immense sums, with the result that in forty years they lowered the death-rate from 36 to 26 per 1,000. That meant a saving of something like 4,000 lives yearly in Liverpool.

The lecturer then proceeded to throw upon the screen limelight views to illustrate his arguments. He first gave as a preliminary, some views of the slums of Old Hamburg. Dealing then with the necessity for making statutory provision for the stability of buildings, he threw upon the screen the picture of a building which had fallen during the process of erection. The Dangerous Structure Department of the London County Council dealt annually with several thousand buildings, which, for one reason or another, were not secure. In two instances the buildings collapsed while the department at Spring Gardens was taking steps to get the structure made secure.

Coming to his second point—that of fire-resistance—he remarked that he did not believe absolutely fire-resisting buildings could be built. Winchester House had the reputation of being one such, and he believed though several fires had occurred in it none had spread beyond the room first affected. He himself had, however, come to the conclusion that from the point of view of building construction, the most inflammable materials were iron and stone. In the recent great fire at Cripplegate it would be remembered that the great iron floors fell into shapes suggestive of boiled macaroni. At the same time, brickwork stood fairly well. It seemed to him that a staircase built of solid oak would offer more resistance to fire than stone. On the other hand, marble was the worst material. His father witnessed the great fire in New York. Although the thermometer stood below zero and the fire-engines were frozen to the ground, the marble columns of the Exchange were calcined to quicklime. As to the question of providing escape from fire in buildings, he ventured to believe that the London County Council had done good work. In fact, so exacting had the Council become in this, that it was very difficult to get a place of amusement put up, except at a heavy cost. Salutary steps had also been taken to insist upon the provision of ample means of escape from factories. This was illustrated by the plan of a factory in which eighty females and six males were employed on an upper floor, the only means of access to which was a wooden step-ladder 2 ft. 1 in. wide. The Council had insisted in this case on two fire-resisting staircases. In the case of the premises of Messrs. Waller & Brown, Hamsel-street, in which the Cripplegate fire broke out, the Council had insisted upon a means of escape from the upper floor to a flat roof. At the fire inquest Mr. Brown stated that he and thirty-eight women in his employ escaped by that means, and but for it there must have been great loss of life.

After touching upon such sanitary requirements as dry walls, and stating that regulations as to drainage should be in general terms, so as not to discourage inventions, Dr. Longstaff proceeded to deal in greater detail with the question of open space about buildings, without which means of ventilation were of little use. Plans were thrown upon the screen to illustrate the growth of slums by the erection of buildings upon back gardens. Others illustrated the overshadowing of one building by another. In the extreme case of some dwellings in Sardinia-street, a number of rooms erected in accordance with the old Building Act had been almost immediately closed as unfit for human habitation under the Housing of the Working Classes Act. The lecturer then exhibited diagrams illustrating the way in which the open space at the rear of buildings is dealt with under (1) the Model By-laws, (2) the Liverpool By-laws, and (3) the London Building Act, 1894. While he gave his preference to the Liverpool method, he stated that London stood alone in having special provisions to regulate the dimensions of internal court-yards and well-holes.

Dealing with the width of streets, the lecturer incidentally expressed his strong disapproval of the removal of such ancient landmarks as St. John's Gate, Clerkenwell, and the Church of St. Mary-le-Strand. There was, on the London County Council, a strong party calling for the demolition of the latter, partly because it was old, and partly because it was a church. Coming to the æsthetic side of the question, he remarked that there were many reasons for affirming that architecture was by far not only the greatest of the arts, but the most important, and would be in future by far the most precious. As he showed at the commencement of his lecture, the larger proportion of the population of this country were residents in towns, where the works of nature were destroyed by the hands of man. Was it not, therefore, of transcendant importance that the work of men's hands should be beautiful? It was a valuable education for a toiler to pass through streets of buildings upon which he could bestow his admiration. They owed great debts of gratitude to such organisations as the Kyrle Society, the Commons Preservation Society, and the Society for the Preservation of Ancient Buildings, the National Trust, and, in no less a degree, to the Edinburgh society—the Cockburn. A committee of taste had often been suggested, but appeared to the lecturer to be full of dangers. In his day no doubt the notorious Wyatt would have been a member of such a committtee, had there been one. Yet, as was well known, Wyatt did his best to deface two of our greatest and most precious national monuments—the cathedrals of Durham and Salisbury. The lecturer instanced the London, Chatham, and Dover Railway girder bridge at Blackfriars as another instance of how the æsthetic side of London life had been neglected. From the Blackfriars Bridge only the dome of St. Paul's was observable.

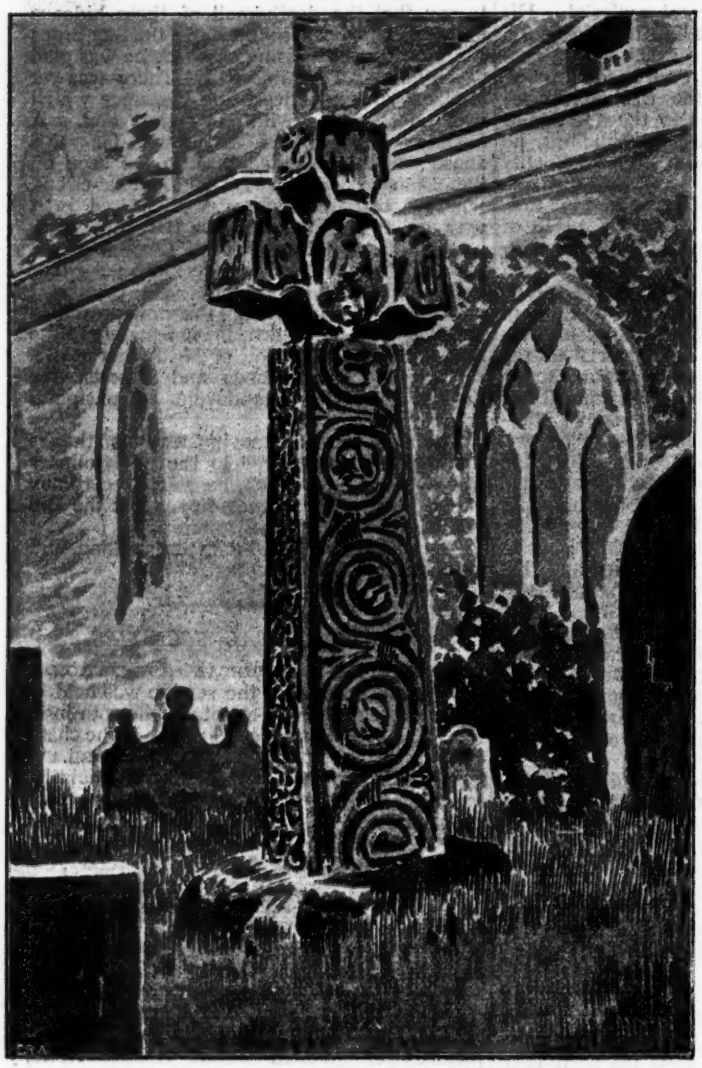
The quaint building opposite Chancery-lane, known to have been the palace of Henry VIII. and Cardinal Wolsley, was disfigured by a tradesman's board which could not but give the Cardinal a fit of indigestion were he now alive. As to sky-signs, the lecturer was glad to say that the death-knell of these hideous erections had been sounded by the Sky Signs Act, towards the passing of which he was glad to say he took a humble part. There was yet a phase of this advertising nuisance which was not dealt with by the Act. A notable instance as to how far this abuse could be carried was to be seen on the south-western quarter of Ludgate-circus, where a certain article was advertised in a way quite unjustifiable. He (Dr. Longstaff) was waiting for the citizens of London to tell the County Council that they must get rid of such a hideous defacement. He compared with this distressing picture the view presented by Regent-street, which, thanks mainly to the wise official supervision of Mr. Arthur Cates, representing the Woods and Forests, the ground landlords, was devoid of unsightly advertisements.

The Chairman, in moving a vote of thanks to the lecturer, referred to the Westminster clearance scheme, which, he said, he cordially supported, and hold strong hopes that the Bill would pass through Parliament.

The vote was adopted with acclamation, and Dr. Longstaff briefly replied.

ARCHÆOLOGICAL SOCIETIES.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—The eighth meeting of the session was held at the rooms in Sackville-street, on the 16th inst., Mr. C. H. Compton, Vice-President, in the chair. Mrs. Collier submitted for exhibition an unusually fine example of a coin of Magnentius, found in College Green, Worcester, also coins of Charles III. of Spain and Louis XIV. of France, together with a token of Horne Tooke. The Rev. H. J. D. Astley, Hon. Secretary, exhibited photographs of old engravings of two large family pictures now at Melton Constable, one illustrating the tournament at Paris in 1438, between Sir Jacob Astley and Sir Gerald Massey; the other a combat at Smithfield in 1441 between the former knight and Sir Philip Boyle, in which they are represented fighting on foot. On either side of the two principal pictures are grouped several smaller views, depicting various scenes in the history of the tournament. From the costumes, armour, and accessories, the date of the paintings would appear to be the sixteenth century.—The paper of the evening was by Mr. Allen S. Walker, on "The Screen of All Hallows the Great." The neighbourhood of Thames-street and the river bank is, said Mr. Walker, one of the most interesting spots in London, and may be called the "cradle of the City," as the earliest place of commerce was at Queenhithe. Ever since the time of the Normans, the customs have formed a source of revenue, and here in 1250, Henry III.'s brother—Richard, Earl of Cornwall—had jurisdiction over weights. In the Steelyard, the site of which is now occupied by Cannon-street Station, the Hanseatic merchants were established and had their Guildhall, their charter of Liberty being granted in 1259. They, however, possessed no chapel, but worshipped in the Church of All Hallows the Great. They beautified the church by presenting windows and founding altars, and at length endowed a chapel therein. Edward IV. gave to the Hanseatic League the absolute property of the Steelyard. Here they erected warehouses and other buildings, but, although the League was suppressed in 1560, the Steelyard remained the property of the League until it was purchased for the Cannon-street improvements in 1853. The church was entirely destroyed in the Great Fire in 1666, with the exception of the tower. After the fire the parishes of All Hallows the Great and Less were united, and the church was rebuilt by Sir C. Wren, the cost of the fabric being defrayed out of the coal dues, and amounted to 5,640*l*. The parishioners, however, raised a rate for the sum of 500*l*. for the interior fittings. The Master of the Steelyard at that time was Jacob Jacobson, a very rich and benevolent man, who gave 10*l*. to the poor of the parish and rebuilt the Guildhall; he died in 1680. There is a curious legend to the effect that the famous screen was made in Hamburg and was the gift of the Dutch merchants; but the researches of Mr. Walker into this matter, which have extended over three years, apparently quite dispose of this tradition, for it appears to have been put forward by Malcolm in 1803, 120 years after the rebuilding of the church. It has also been said that Jacob Jacobson gave the screen, but



Eyam.

Bakewell.

Ancient Crosses in Churchyards at Bakewell and Eyam. From Sketches by Mr. F. H. Cheetham.

he died in 1680, and the church was not ready to receive any fittings until 1683. The truth seems to be that the parishioners had always desired to have a screen, but they were in want of money, and could not pay for it. Mr. Theodore Jacobson, who had succeeded his brother as Master of the Steelyard, had given the pulpit to the church, and thereupon came forward and presented the screen. An interesting comparison between the screens of All Hallows and of St. Peter's, on Cornhill, the only other London church with a screen, strongly confirm the belief that both are of English design and workmanship. They only differ in design by some small details, the measurements of both are identical, the cost of each was about the same, and there are other entries in the parish books as to the charges for the screen; and, finally, it is known that the screen of St. Peter's was carved by Englishmen. Some beautiful photographs of both the screens illustrated the paper. The screen is now at St. Margaret's, Lothbury.

CROSSES AT BAKEWELL AND EYAM.

OF the two crosses of which sketches are here given, that at Bakewell stands in the churchyard, close to the east wall of the south transept. It is 7 ft. 10 in. high, the width narrows from 23 in. at the base, to 18 in. towards the top, and it is 14 in. in thickness. The side now facing east, shown in the sketch, has at the top a mutilated figure of a man riding, which is supposed to represent Christ entering Jerusalem. The shaft is sculptured with a scroll springing alternately right and left from a cornucopia. At top of the scroll is a somewhat nondescript animal nibbling at a bunch of fruit, supposed to represent a squirrel, which, the Bishop of Bristol has pointed out, was, according to the Northmen, the messenger between the gods and the earth, its pathway being the sacred tree known as the "world-ash." "I suggest," he says, "that the animal on the Bakewell Cross recalls this early belief . . . In this case we should have a combination of the Christian and the Teutonic religious beliefs, the Christian tree of life and the pagan messenger of the gods in its topmost branches." The shaft is most likely embedded some distance in its present pedestal-stone, and the figure at the bottom is rather difficult to understand, though generally described as a hand extending a bow, with an arrow pointing upwards. The sides of the shaft are likewise sculptured with a scroll pattern, while the west side, facing the wall of the church, bears a series of sculptures, which, however, are so defaced as to be quite unintelligible. One antiquary tells us that they represent the birth, crucifixion, entombment, resurrection, and ascension of Christ, whilst another assures us that they are intended to represent the twelve apostles! This was, no doubt, originally, the front of the cross, which, when set up in its present position, was placed with its best preserved face to the east. The head of the cross is missing, and the arms are very short, though, I think, complete, as their ends are panelled and covered with scroll work, and the incised moulding of the shaft is carried round them.

The cross at Eyam, which also stands in the churchyard, is in some respects a finer example than that at Bakewell. The east side of the shaft shown in the sketch is ornamented with a scroll like that of Bakewell, and on the head and arms of the cross are figures of four angels. The west face, which is in a far more perfect state than that of Bakewell, is covered, in the lower portion, with knot-work, above which are sculptures representing the Virgin and Child, whilst on the head and arms are again four angels. The sides of the shaft are covered with knot-work. The height of the cross is about 8 ft., but a piece is missing between the stem and the head. For a long time, it is said, these two fragments used to lie among the docks and nettles of the churchyard. They were set up in their present position about sixty years ago.

Dr. Cox has come to the conclusion that these crosses may safely be assigned to the eighth or ninth century. The Bakewell Cross he assigns to the eighth century, and the one at Eyam perhaps a century later. Scroll work is sometimes, though rarely, found in Norman work, but he is satisfied from the style and finish of these two crosses that they are undoubtedly monuments of the Anglo-Saxon period.

F. H. CHEETHAM.

THE LONDON COUNTY COUNCIL.

THE ordinary weekly meeting of this Council was held on Tuesday in the County Hall, Spring-gardens, Mr. T. McKinnon Wood, Chairman, presiding.

The Twenty-mile Radius.—Mr. F. Smith presented a petition from the London Building Trades Council, asking the County Council to return to its original policy of applying the London Trade Union wages and hours of labour to a twenty-mile radius. The petition was referred to the General Purposes Committee.

Labour Bureaux.—Mr. N. Robinson presented a memorial from the St. Pancras Vestry asking the Council to take steps to legalise Labour Bureaux throughout London. The memorial was referred to the General Purposes Committee.

The Building Act Committee.—The Special Committee of Selection appointed last week to arrange the *personnel* of the new Standing and Special Committees presented their report containing the names of the proposed members. The following gentlemen form the Building Act Committee:—Sir Arthur Arnold, E. Bond, W. Davies, G. Dew, Lieut.-Col. C. Ford, R. W. Granville-Smith, Sir John Hutton, C. Jerome, G. B. Longstaff, R. Parker, A. Penfold, G. H. Radford, H. R. Taylor, D. S. Waterlow, and E. White.

Telephones.—An adjourned report of the Highways Committee with reference to the

Telegraph Act, 1892, and the National Telephone Company's underground works was brought up. The Committee recommended:

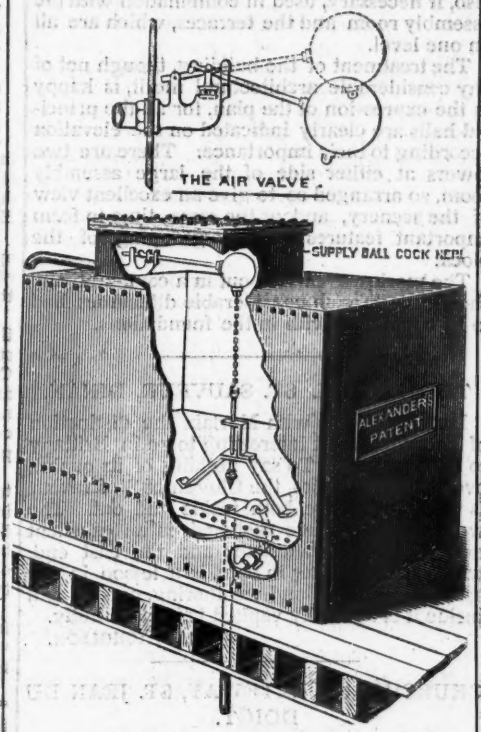
"That the Council do approve of the insertion in the draft agreement between the Council and the National Telephone Company, prepared in accordance with the resolution of the Council of June 1, 1897, of the following clause, and of the schedule therein referred to: The Company shall not during the time this agreement shall be in operation, without the previous consent in writing of the Council, charge to subscribers for telephone supply or otherwise any amount larger than the amount of the annual subscription which would be payable by subscribers to the Company within the Metropolitan area of the Company according to the general statement of tariffs contained in Schedule C hereto. Schedule C: General statement of tariffs in the Metropolitan area: On five years' agreement, first connexion, 12*l.* per annum; second and additional connexions, 10*l*; private houses, 8*l.* On a yearly agreement, first connexion, 15*l.* per annum; second and additional connexions, 12*l.* 10s.; private houses, 10*l.* N.B.—These tariffs include an area of 609 square miles, which comprises the towns of Dartford, Reigate, Redhill, Croydon, Epsom, Richmond, and Kingston on the south side of the Thames, and Tilbury, Woodford, Romford, Epping, West Ham, Harrow, Ealing, and Hampton Court on the north side of the Thames."

Mr. Benn moved: "That the recommendation be referred back, with an instruction to report to the Council the terms imposed on the National Telephone Company in leading provincial cities for the protection of the streets, and for securing reasonable charges to the telephone subscribers." The amendment was seconded by Sir John Hutton, and carried on a division.

The Council, having transacted other business, adjourned at seven o'clock.

ALEXANDER'S PATENT CISTERN AND AIR VALVE.

THIS is one of the most useful improvements in water cisterns that we have seen for a long time. Its chief object is to exclude dust and dirt from the water, so that the latter shall be delivered to the consumer in the same state as it is received in the cistern from the water authority. It is quite impossible for mice to fall into this cistern, for the top is firmly screwed down and the only access to the inside is by means of an air valve, although, of course, part of the top screws off to permit of inspection in case of necessity. Another improvement is a device for warning the householder when the water is cut off from the main. The whole may be described as follows:—The cistern is constructed so that the bottom has sloping sides; the top is furnished by an air-chamber which rises above the general level; this chamber may be opened from above for inspection purposes. Inside is an ordinary ball-cock so adjusted as to permit of an air-space in the upper part of the air-chamber. Apart from this is an air-valve, actuated automatically (according to the height of the water in the cistern) by an ordinary ball-float. On some water being drawn out from the cistern, this float sinks with the water level, and this movement is communicated to the valve, which is thus caused to open, and air, corresponding in bulk to the quantity of water drawn off, is admitted. When the water is on at the main the depression of the water level in the cistern also affects the ball-cock in the usual way, and water is admitted. As this rises it carries the ball-float with it, and the air-valve is closed at the same time as the water ceases to run in from the main. In the event of the ball-cock getting out of order, and the water rising beyond the normal top level in the cistern, the float of the air-valve rises with it, and, by a reversing motion, that valve is opened, permitting the water to run through it, thus converting itself into a "waste-pipe." Another part of the invention consists in giving warning when the water is cut off at the main. On the sloping sides of the floor of the cistern a metal framework is fixed in such a manner that two holes, one directly above the other, but a few inches apart, are directly in vertical alignment with a hook affixed to the under side of the ball-float of the air-valve. To this hook a chain is fixed, which in turn is joined to a vertical rod working in the two holes mentioned, and which act as guides. To the lower end of this rod a spindle valve is fixed, which fits into the aperture of the outflow pipe beneath. This apparatus works as follows: As the water is drawn off, and the float of the air-valve descends, the vertical rod descends also, until when the water reaches a certain level the spindle valve alluded to fixes in the aperture of the outflow pipe, and thus prevents any more water from running out of the cistern. This can only take place when the water is cut off from the main, as otherwise the inflowing water preserves the water level in the cistern in such a manner as that it is impossible for it to be low enough for the spindle valve to act. People below finding no water running know that there is yet a good supply left in the cistern,



Alexander's Patent Cistern and Air-valve.

and in order to get it, one must go up to the cistern and open a by-pass. By this warning, the remaining water (say three-quarters the capacity of the cistern) may be used as economically as possible.

As we said at the commencement, this invention is a very useful one, and we shall be greatly surprised if it is not very rapidly recognised. Already the East London Water Company has approved the use of the cistern and appliances in their district. We have seen the inventions at work, and can testify to their effectiveness.

THE NORTHAMPTON INSTITUTE, CLERKENWELL.

THE Northampton Institute, or City Polytechnic, was opened on the 18th inst. by the Lord Mayor and the Lady Mayoress. The land upon which the Institute stands is roughly one and a quarter acre in extent, and is triangular in shape, the apex of the triangle resting upon Northampton-square and the base upon St. John-street-road. The block of buildings in St. John-street-road contains the main entrance in the centre, with the large hall on the north, and on the south a four-story building, chiefly, but not entirely, consisting of rooms devoted to the social and recreative work of the Institute. The nothern side of the triangle, extending from St. John-street-road to Northampton-square, along Lower Charles-street, consists of the buildings which contain the bath and the gymnasium, each of which is 120 ft. long. The former has dressing-rooms beneath, and the latter has over one end of it a three-story building devoted to educational work. These buildings enclose an internal triangle or courtyard, from which the inner rooms and corridors derive their light. On two of the floors the corridors run completely round the building, the other floors having corresponding corridors as far as the limits to which they extend. The various floors are reached by three staircases placed at the angles of the triangle formed by the courtyard. Over the main entrance there is a tower supporting a bracket clock, and containing in the belfry a peal of bells intended to act as the chimes and hour bell of the clock.

Broadly speaking, the new institute in Clerkenwell is to provide the recreative and technical side of a complete polytechnic. Attention has been paid to the immediate requirements of Clerkenwell, and the educational work of the Institute has been divided into the following departments:—(1) Mechanical Engineering and Metal Trades, (2) Artistic Crafts, (3) Applied Physics and Electrical Engineering, (4) Horology, (5) Electro-Chemistry, (6) Domestic Economy and Women's Trades. For the present the non-metal sections of the building and furniture trades are grouped with the mechanical engineering and metal trades.

In this department the engineering workshop is at the north end of the basement corridor in the front, or St. John-street-road, building. The workshop is equipped on the two long sides with hand-benches fitted with various kinds of vices. Down the centre of the room there are the machine tools. Across the other end of the shop are the grinders. The whole of the power for the machine tools is derived from three different electric motors, so that only the small amount of shafting connected with the tool in use need be run at any one time. On different nights of the week classes are held in this shop for fitters and machinists, cycle makers, tool makers, die sinkers, and press tool makers. The next room is the smithy, and on the opposite side of the corridor will be found rooms devoted to carpentry and wood work generally. Other rooms in this department are a boiler house, power room, electrical engineering laboratory, plumbers' shop, metal plate workers, mechanical and building trades laboratory, plastering and brick-cutting room, instrument workshop, and drawing offices. The drawing offices are on the first floor, at the east end of the building in rooms Nos. 76 and 77. The rooms have been fitted with specially designed tables and conveniences for workshop drawing. A special feature of the rooms is the system of lighting, which is that of inverted electric arcs. The Applied Physics and Electrical Engineering Department will comprise (on the first floor) an electrotyping room, a laboratory for metallurgical chemistry, and (on the second floor) an optical laboratory, near the south-west staircase junior physical laboratory (also used for physical work in connexion with the engineering and building trades sections); senior physical laboratory; heavy electrical engineering laboratory (in the basement), and, on the second floor, the electro-chemistry laboratory.

Lecture and class rooms are provided on the first floor, but, as the bulk of the instruction is given in laboratories, workshops, drawing offices, &c., the provision of this kind of accommodation is not so extensive as might, perhaps, be expected in so large an educational building. There are two large lecture-rooms, one at each end of the corridor.

The horological department consists of the watchmakers' room and the clockmakers' room.

The work taken up in the artistic crafts department differs from the ordinary art work pursued in similar institutions, in that it is wholly aimed at reaching the artistic industries of the Metropolis. The department is accommodated with two large studios, embracing the greater part of the top floor of the educational side of the building, and has in addition other rooms devoted to special crafts. Design and Modelling are taken in the large studios, the design classes which involve working on paper being taken in room No. 122, and those which involve working in plastic material being taken in room No. 121. Accommodation is provided for silversmiths' work, chasing and enamelling, wood carvers, goldsmiths, engravers, and painters and decorators.

The domestic economy and women's trades department is situated at the east end of the top or third floor on the educational side of the building. The domestic economy school consists of three rooms, viz., the kitchen, the dressmaking room, and the laundry. In the women's trades room classes are held in which attempts are being made to bring technical instruction, as distinct from domestic economy, within the reach of women engaged in various trades.

The provision for the work in the social and recreative section includes (1) a large hall for entertainments, (2) a gymnasium, (3) a swimming bath, (4) social and club rooms for men and women, with refreshment rooms attached, (5) library and reading rooms, (6) rooms underneath the hall suitable for music classes. The large hall is capable of seating 1,400 people. The body of the hall is 100 ft. long by 67 ft. wide. The platform extends about another 24 ft. backwards, and upon a low gallery over the back of the platform is an organ. There are four direct exits from the hall into the street from the ground floor and three from the gallery level. Cloak rooms are provided at the north end upon both floors. The gymnasium is 120 ft. long by 50 ft. wide, with a gallery for spectators running round three sides of it. Underneath one end are dressing rooms, baths, and lavatories for the accommodation of the male members, and at the same end on the ground floor there is similar accommodation for the women members. The swimming bath is also 120 ft. long and 50 ft. wide. The pond is 100 ft. long by 35 ft. wide, and lined with white marble. It is surrounded on three sides by the dressing boxes, seventy in number, and to a less extent by a gallery for spectators.

The social and club rooms comprise a women's social room, room for the lady superintendent, and the suite of refreshment rooms consisting of one for the men, and the other for women, with a servery between them. At the far end of the men's refreshment room is a room which has recently been furnished as an extension of the social room accommodation for men.

The library and reading rooms are on the second floor on the front side of the building. The library

is a room about 52 ft. long by 22 ft. wide. Rooms for music classes are underneath the large hall.

For illustrations of the building and for further particulars, see the *Builder* for April 15, 1893; June 30, 1894; and June 8, 1895. The builder was Mr. Walter Wallis, and, as most of our readers know, the architect was Mr. E. W. Mountford.

DRAWINGS FOR THE ROYAL ACADEMY.

As usual, we shall be glad to receive and deliver at the Royal Academy all drawings intended for the Architectural Room which are sent to us in time to be photographed for publication before sending in.

The last day for receiving drawings at the Academy is Monday, March 28, and we can receive none at this office later than 12 noon on Saturday, March 26.

Every drawing must have *two* labels giving the title of the work and the name and address of the author, one affixed to the back of the drawing, and the other attached by a string so as to hang over in front of the drawing, and must be accompanied by a letter to the Secretary of the Royal Academy, giving also the title of the work and the name and address of the author. If more works than one are sent they must be numbered, and referred to by the corresponding numbers in the letter to the Secretary.

Gilt frames *only* are admissible at the Royal Academy.

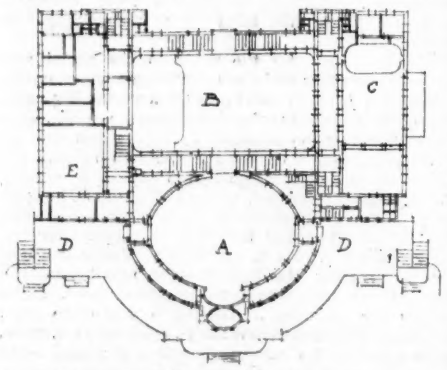
We cannot provide labels for drawings which are sent without them.

Illustrations.

THE PEOPLE'S PALACE AT ZURICH.

THE new People's Palace (or "Tonhalle") at Zurich, fulfils the modern requirements of a Continental town in combining different classes of concert halls, assembly rooms, &c., with a restaurant, some club rooms, &c., as well as a large garden for use in summer. The accommodation necessary at Zurich is extensive, on account of the large number of tourists who constantly pass through the town. Its position, overlooking the lake, and backed by the mountains, was primarily selected to meet the wishes of the sightseer; the facilities for approach are very convenient for him, as the frontage of the garden is towards the main embankment of the Zurich Lake, and near the principal hotels and the theatre.

The architects of the building are Messrs. Fellner & Helmer, of Vienna, whose commission was the outcome of a competition which at the time caused much bad feeling. As a matter of fact, there were three competitions, and two of the assessors in the second competition actually competed for the commission in the third, utilising the ideas of the unsuccessful candidates.



The People's Palace, Zurich. Plan.

A.—Pavilion. B.—Grand Concert Hall. C.—Small Concert Hall. D.—Terrace. E.—Restaurant.

The requirements comprised the provision of a principal concert hall, with seating capacity for 1,500, an orchestra of eighty, and a chorus of 350; a large assembly room to accommodate 1,000 visitors; and a small concert room suitable for the presentation of stage-plays for an audience of 500. The necessary restaurant, club rooms, and offices had to be provided for on a large scale, whilst particular stress was also laid on the facilities of cloak-room accommodation, the cloak-rooms, as a matter of fact, taking up the whole of the space on the ground floor, which is directly below the two concert rooms.

As regards the general arrangement of the building, the large assembly room takes the principal position with a view on to the lake, and there are terraces in front of this part of the building, with flights of steps down to the garden. The large concert room is at the back, and the smaller concert room at the side, but they have been so placed that they can be easily used together for public functions, and also, if necessary, used in combination with the assembly room and the terraces, which are all on one level.

The treatment of the building, though not of any considerable architectural merit, is happy in the expression of the plan, for all the principal halls are clearly indicated on the elevation according to their importance. There are two towers at either side of the large assembly room, so arranged as to give an excellent view of the scenery, and at the same time to form important features in the grouping of the block.

The work was carried out in a comparatively short time, though considerable difficulties had to be contended with in the foundations.

THE PORTAL ST. SAUVEUR, DINAN.

DINAN disputes with Morlaix the distinction of being the most interesting town in Brittany to the architect. To say nothing of its quaint, overhanging houses, the Church of St. Sauveur is very impressive, both inside and out. The west doorway, here sketched, is an excellent example of Romanesque; and the east end, which is much later in date, is a lesson in the art of buttressing and weathering, outside and inside it is apsidally vaulted very beautifully.

C. A. NICHOLSON.

CHURCHYARD GATEWAY, ST. JEAN DU DOIGT.

ST. JEAN DU DOIGT is a secluded little village reached by diligence from Morlaix, lying in a wooded valley running down to the sea. Its church, which is supposed to contain the finger of St. John, from which flows a miraculous stream, is quite one of the most picturesque collections of buildings in Brittany. The churchyard is entered by the gateway here sketched, and contains a magnificent fountain, the lower part of which is stone, the upper of elaborately modelled lead, representing the baptism of Christ. The churchyard also contains an open chapel of Renaissance character, with a carved wood roof.

C. A. NICHOLSON.

DESIGN FOR A SMALL COUNTRY CHURCH.

AN attempt was made in making this design to get away from the hackneyed type of country church, and also to keep well within the limitations of the material to which it was restricted by the conditions of the Grissell Medal Competition, for which it was prepared.

A certain air of quaintness combined with simplicity has been aimed at, and the author is inclined to believe, from the charming results in some of the quaint church towers of Surrey and Kent, attained by a similar treatment, that the design would not be unpleasing in execution.

H. MACINTOSH.

MEMORIAL TO THE LATE COUNTESS OF DUCIE.

THE monument illustrated is to the memory of the late Countess of Ducie, and stands in the beautiful churchyard of Tortworth, Gloucestershire. The sculpture was by Mr. F. W. Pomeroy of Chelsea, the builder's work being carried out by Messrs. Cornish & Gaymer, of North Walsham.

The complete memorial to the late Countess consisted not only of this monument but of the removal of the organ to a more fitting place in the church, two very fine Elizabethan tombs, which it formerly completely obscured, having been thus brought into view. It has been set in a teak case, with a memorial inscription in repoussé copper, and two stops have been added to the pedal organ. The tone of the instrument, formerly too powerful and oppressive for the church, has been greatly improved by the new conditions. The work was executed in 1895.

W. D. CARÖE.

"BRIARCOURT," HUDDERSFIELD.

THIS house is built of local stone, the quarry being chosen because it yielded stone having variety of colour, as opposed to the usual ideal of each stone being exactly the same tint. The mason joints are also broad. The roof is of stone slates. The interior woodwork was yellow pine, three of the rooms being panelled. The total cost, including 130*l.* for balustrades, was 3,500*l.*

EDGAR WOOD.

Correspondence.

To the Editor of THE BUILDER.

TYPHOID AT MAIDSTONE.

SIR,—My attention has been drawn to criticisms in your issue of March 19 relating to my report on the Maidstone water supply and the typhoid epidemic, published in the *Public Health Engineer* of March 5.

You accuse me of suppressing evidence, and, apparently, ground that accusation on my manner of dealing with Dr. Washbourn's contributions to the Local Government Board Inquiry.

The cardinal fact in the Maidstone epidemic is that, although a bacteriologist was fetched to Maidstone very early in the day, and although the Water Company afforded every facility for investigation, and although many examinations were actually made, there was total and absolute failure to discover the presence of the typhoid bacillus in any part of the water supply.

The Tutsham in Field spring, which is supposed to have been the worst source of the disease, was, indeed, subjected to bacteriological examination on September 21, October 19, November 5, December 11 in the year 1897, and on each of these occasions manifested its entire freedom from the typhoid bacillus.

Now, the most natural explanation of this cardinal fact is that, throughout the epidemic, the Maidstone water has been devoid of typhoid bacilli; and I believe that is the true reading to be adopted.

Dr. Washbourn's assertion, which you quote—"that no importance can be attached to this failure to detect the bacillus"—I did not consider worthy of notice. It is a curious eccentricity, the counterpart of which has often been heard when my scientific brethren have met with results which do not square with preconceived notions.

I pay more attention to the actions of Dr. Washbourn than to his words; and, inasmuch as he took the trouble to seek the typhoid bacillus, I am inclined to believe that he did attach importance to the result of that search.

If Dr. Washbourn did really believe that the typhoid bacillus was incapable of being found in the drinking water—as he appeared to hint when he gave evidence before the Local Government Commission—why did he not decline to make the search which he knew was foredoomed to failure? You seem to accuse me of another suppression because I paid no attention to that passage in Dr. Washbourn's report, which runs as follows:—

"The Tutsham in Field spring was undoubtedly contaminated with animal excreta on both occasions on which it was examined."

To that I reply that, inasmuch as that assertion of Dr. Washbourn's was based only upon his finding rather more coli bacilli than he thinks ought to be present in water, I attach very little importance to it. And my favourable opinion of the quality of the spring is confirmed by Dr. Sims Woodhead, who failed to find coli bacilli at all in that water. And, finally, the early chemical analysis of Mr. Gregory and Dr. Adams are quite conclusive. The remarkable absence of free ammonia in this spring is demonstration of the absence of that sewage contamination upon which the serious charge against the Water Company has been made to rest.

J. ALFRED WANKLYN.

*** Unless Professor Wanklyn means to impugn either the veracity or the ability of Dr. Washbourn—and we find no trace of this in the foregoing letter—the latter's evidence as to the contamination of some portion of the water must be taken into consideration by all impartial inquirers, and we can only repeat that its suppression by Professor Wanklyn in his article on the subject was "unscientific." Perhaps it may be pertinent to ask if the typhoid bacillus has been discovered by Professor Wanklyn in progress from the cesspools, on which he evidently lays the blame, to any of the infected houses.—ED.

THE ACCIDENT AT MESSRS. CRACE & SONS.

SIR,—I had a similar accident some years since, and found the way the gas and air mixed in certain relative proportions automatically, very interesting.

An ordinary three-light hydraulic pendant had been pulled down sufficiently to unseal the dip-pipe, and the burners were left alight and the room vacant for three hours.

An explosive mixture of gas and air had formed against the ceiling, and was descending (as it

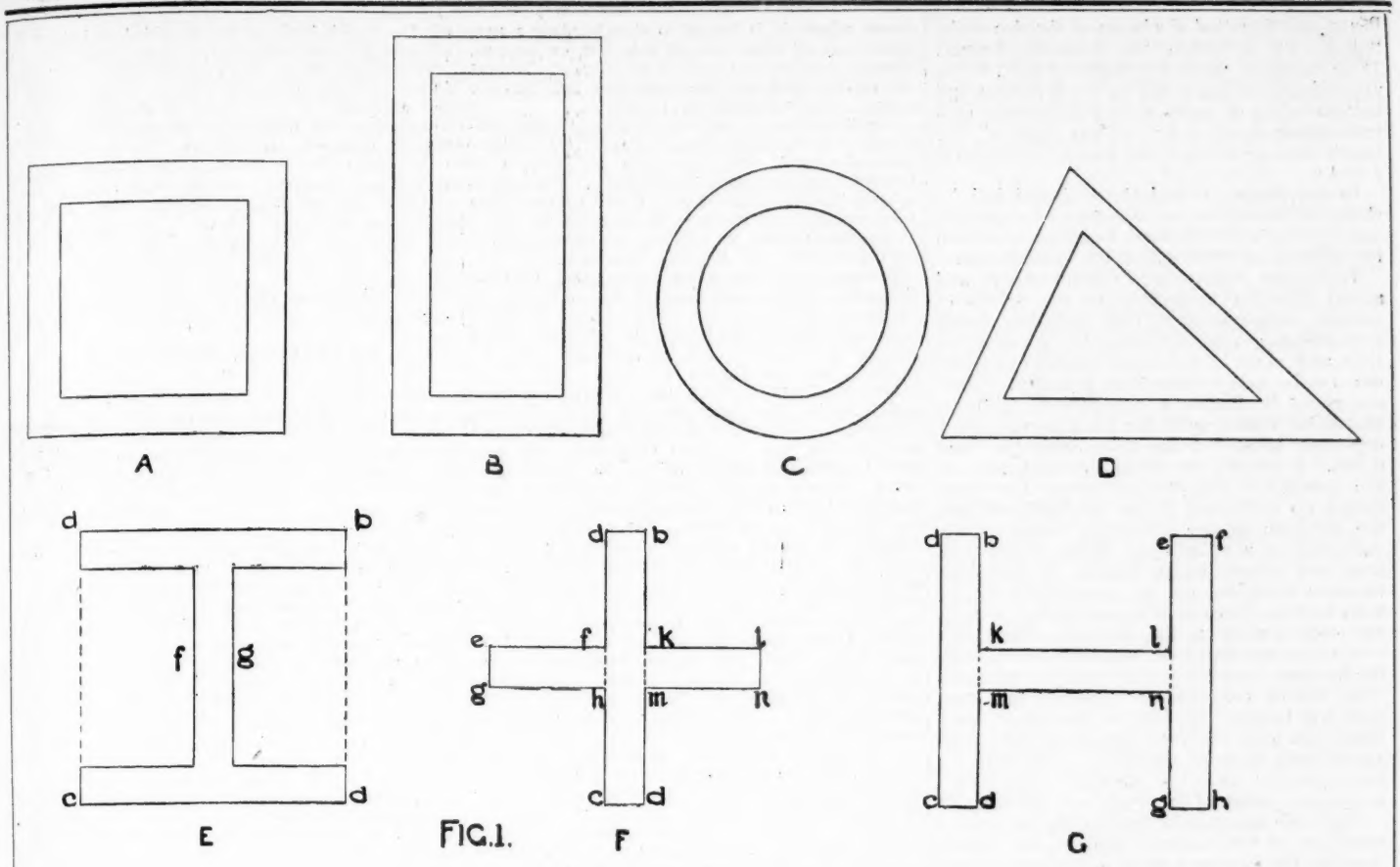


FIG. 1.

formed) towards the floor; in this case it had reached about 4 ft. downwards from the ceiling.

A person entered the room, pushed the pendant upwards, and as soon as the lights reached the explosive mixture, there was an explosion—a bay window blown into the street, and the room wrecked.

The remedy is simple and inexpensive. If a ventilator is inserted in the chimney breast discharging into the flue, the explosive mixture will not reach the flame but escape into the flue.

ROBERT PHILLIPS
(County Surveyor, Gloucester).

THE ANCIENT FRIARY, BANGOR.

SIR,—In a short paragraph in the *Builder* of to-day, describing the recent discoveries at Bangor, credit is given to me, together with Mr. Gregory and Professor White, of considering "the so-called stone pavement" to be "the pavement of one of the walls of an ancient building."

I should be much obliged if you would give me the opportunity of stating that "the so-called stone pavement" I always considered to be part of a rubble wall. It was constructed with massive sea boulders.

In forming the new roads the ancient foundations have been cut through at a few points only. They are sufficient, however, to give us an idea of the size of the Friary, with the positions of the Church and conventual buildings.

Of the sepulchral slabs discovered, one is of the most perfect design of any in this neighbourhood. The heraldic device on a second renders it of especial interest.

The roads are being laid out from the plans of Mr. P. Shearson Gregory, of Bangor, who has kindly given me every facility to examine and take notes of all discoveries.

A full report will probably be published by Mr. Gregory and myself in "Archæologia Cambrensis."

HAROLD HUGHES, R.C.A.

Bangor, March 19, 1898.

The Student's Column.

THE CALCULATION OF STRENGTH OF MATERIALS AND RESISTANCES.—XIII.

FROM the consideration of beams built up of plates and angle irons rivetted together, with which we dealt in the last chapter, we may now go on to those in which the web is represented by an iron framework or trussing. As in the case of rivetted beams, the flanges may be considered as resisting the whole of the longitudinal compressive or tensile stresses; and, as before, the strength of the flanges to resist the tensile or compressive stress must be examined in the same way as in the case of rivetted beams.

The bending moment or moment of rupture in the case of beams of this character is, of course, exactly the same as for any other beam loaded in a similar way, inasmuch as it depends upon the load and its position with respect to the points of support, and is in no way influenced by the character of the beam; but the resisting moment of the beam does depend upon the form of the beam and the arrangement of the material of which it is composed.

With such beams as we are now considering, the moment of resistance of the beam is clearly made up of the longitudinal resistances of the flanges measured by their moment about the neutral axis. It therefore equals the longitudinal compressive resistance of the upper flange multiplied by its leverage about the neutral axis, plus the longitudinal tensile resistance of the lower flange multiplied by its leverage about the neutral axis. This equals the sum of the longitudinal resistances of the two flanges multiplied by half the depth of the beam. Or if we assume that the longitudinal resistances of the flanges are, as they must be, equal, then we may see that the moment of the resistance of the beam is equal to the longitudinal resistance of one of the flanges multiplied by the whole depth of the beam.

We said that the longitudinal resistance of the two flanges must be equal, and this is true as long as the beam is safely sustaining its load. But it does not necessarily follow that the longitudinal strength of each of the flanges is equal, although, if the beam is well and scientifically designed, both the ultimate strengths and the resistances of the flanges will be equal. And since, as the proverb has it, "the strength of a chain is that of its weakest link," so in a beam, if one flange be weaker than the other, the beam will fail when the strength of that flange is too small to resist the portion of the whole stress which comes upon it. And, inasmuch as we have seen that the moment of resistance of the beam is the longitudinal resistance of either flange multiplied by the whole depth, it follows that the flange will fail when its resistance is less than the bending moment divided by the depth of the beam.

The web of a rivetted girder, and, indeed, of all iron girders, is far more likely to fail by buckling than by shearing, and their ability to resist this is calculated in a similar way to that of a column or strut, for they may be regarded as flat columns or struts, the thickness being the least diameter; and the following formula may be used for estimating the buckling load:—

$$BL = \frac{14}{1 + \frac{d^2}{1000\,b^2}}$$

where BL is the buckling load in tons per square inch of vertical cross-section of web, b is the thickness of the web, and d is the depth of the girder.

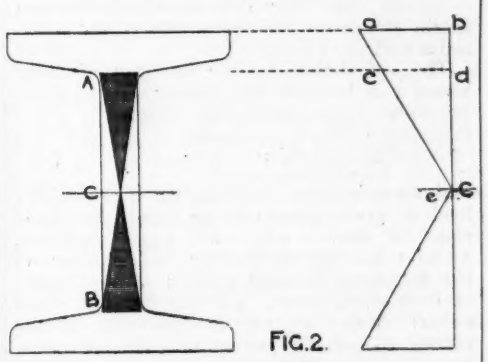


FIG. 2.

The safe load will be the proportion of the buckling load that the factor of safety dictates.

In rolled iron or rolled steel girders the web is, for practical reasons of manufacture, considerably thicker in proportion to the flanges than in the case of rivetted or lattice girders. It is, therefore, hardly fair, although it is well within the limits of safety, to regard the flanges only as resisting the compressive and tensile strains. In the diagram fig. 2, A C B is a rolled iron joist, showing, in the hatched portion of the web, the relative resistance actually afforded to compression and tension by the part of the web. Assuming that the upper flange is resisting a compressive stress of 5 tons per square inch by drawing A B, as in the diagram, to represent 5 tons to scale, and drawing A E to the neutral axis, we should have at C D the amount of compressive stress resisted by the top fibres of the web, and the triangle C D E would therefore give us the amount of stress resisted by the upper half of the web, and a similar triangle that resisted by the lower half of the web. In assuming the moment of resistance of rolled iron joists, we should therefore take the moments of these triangles, acting at their centre of gravity, about the neutral axis, in the method which we have already explained in dealing with the general principle of moments of resistance.

For rough calculations, although not exactly accurate, the strength of beams not of a precisely square and solid form may be approximately calculated as follows:—

With hollow beams of the forms A, B, C, D, in the diagram, fig. 1, the thickness of the beam being taken as equal throughout, a tolerably close approximation to the real strength may be obtained by finding the strength as a solid

beam, and then that of a beam of the size of the hollow, and deducting this from the former. With beams of the forms shown at E, F, G, the approximate strength will be for E (its top and bottom being of equal size) the strength of a rectangular beam *a b c d*, less that of two beams corresponding to the hollows deducted at *f* and *g*.

In the figures F and G we should find the strengths of three separate beams *a b c d*, *e f g h*, and *k l m n*, and add them together to obtain the approximate strength of the form shown.

Triangular beams vary in their relative and actual strength according to the results of various experimenters, this variation being probably due to the difference in various materials, and even in the same material between the tensile and compressive strength. Thus, according to Barlow's experiments with fir, triangular beams with the base up will carry one-sixth greater loads than with the base down. Tredgold, on the other hand, came to the conclusion that the position of the beam makes no difference to the strength, and that the strength of the triangular beam is one-third that of a rectangular beam of the same base and perpendicular height. A triangular beam is therefore not an economical one, as, with half the material of a rectangular beam, it has only one-third the strength. Hodgkinson, experimenting with cast-iron beams with the base up, found that the strength was one-third that of a rectangular beam of the same base and height. Rennie, on the other hand, found that with the base uppermost his results agreed with those of Hodgkinson, but with the base down he made the strength about ·6 of a rectangular beam of the same base and height.

The truth seems to be that within the limit of elasticity of the material it does not matter whether the base or apex of a triangular beam is uppermost; but when the elastic limit is exceeded, then the difference between the tensile and compressive strength of the material affects the result.

The calculation for the strength of stone beams may be made in a similar way to those for timber beams, using the formula

$$W = \frac{C B D^2}{L}$$

and assuming the constant for the breaking load of good granite to be 1 cwt.; for good slate on bed, 3 cwt.; for good sandstone, ½ cwt.; for marble, 1 cwt.; for limestone of the nature of Portland, ½ cwt.; of the nature of Bath stone, ¼ cwt. The safe loads for stone beams should not exceed one-tenth of the breaking load, by reason of the very great variation in different specimens, and the liability to want of uniformity in their structure and composition.

BOOKS RECEIVED.

NORTON-SUB-HAMDON, in the County of Somerset. By Charles Trask. (Taunton: Barnicott & Pearce.)

ARCHITECTURAL PHOTOGRAPHY. By G. A. T Middleton. (Hazell, Watson, & Viney).

GENERAL BUILDING NEWS.

NEW CHURCH, ABERDEEN.—Separate tenders are to be procured for the proposed new Established Church (800 sitters) at Mid Stocket-road, Aberdeen, and for the chancel and vestry. It is not intended meantime to expend much above 4,500*l.*, but when the funds permit, a hall, &c., will be added. Mr. W. Kelly, Aberdeen, is architect.

RESTORATION OF FALMOUTH PARISH CHURCH.—Some works of restoration at this building have just been carried out by Messrs. Rickard, of Plymouth, under the supervision of the architect, Mr. Edmund Sedding, also of Plymouth. The total cost of the alterations and additions has been about 3,000*l.*

WESLEYAN CHAPEL, HALIFAX.—A new Wesleyan Chapel is to be erected at the top of Pellon-lane, opposite the end of Queen's-road. This will consist of a chapel at first, to be followed by a schoolroom, for which land is reserved. The architects are Messrs. Utley, Hebblethwaite, & Co., and the cost of the edifice, exclusive of site, will be over 3,000*l.*

WESLEYAN CHAPEL, PRESTON, HULL.—On the 17th inst. the foundation stones of the new Wesleyan chapel at Preston were laid. The chapel is being built on the Hedon-road, at the entrance to Preston village. Mr. Leonard Sharp is the architect.

BAPTIST CHAPEL, OADBY, LEICESTERSHIRE.—A new Baptist chapel is being erected at Oadby. The building is in the Gothic style, and when completed will accommodate about 400 worshippers. Below the chapel is a school-room for Sunday-school purposes. At the west end of the chapel there is a recess, where it is hoped to shortly place a new organ, and at either side of this are the vestries. There is a gallery in course of erection at the east end of the building. The total cost will be over 2,000*l.* The architect is Mr. G. Brown.

CONGREGATIONAL CHURCH, PANTEG, MONMOUTHSHIRE.—The memorial stones of the new Congregational Church now in course of erection at Panteg, Ystalyfera, were laid recently. The church is being built of native stone. It will accommodate 1,000 seatings, and the cost is estimated at 3,000*l.* The architect is Mr. W. Williams, Swansea, and the contractor, Mr. J. R. Williams, Ystalyfera.

SCHOOL, CADOXTON-BARRY.—The sanction of the Education Department has just been obtained by the Barry School Board to the erection of a school on a site in Barry-road, Cadoxton. The new school will cost about 4,000*l.*, and the architect is Mr. H. Budgen, Barry and Cardiff.

SCHOOL, YOKER, NEAR GLASGOW.—The new school which has been erected in Elgin-street, Yoker, by Old Kilpatrick School Board, was opened on the 17th inst. by Lord Overtoun. The new school is three stories in height, the ground floor being utilised for the infant department and Standard I., the other standards being arranged on the first and second floors. The head master and mistress have their private rooms on the ground floor in close proximity to the respective boys' and girls' entrances. There are also rooms provided for male and female teachers on each floor. On the upper floor a portion is to be utilised for a cookery-room. Cloak-rooms and lavatories are provided on each floor. There are separate entrances for the boys and girls, as also playgrounds and latrines, which are detached and placed at some distance from the school. There will be provided a detached house for the janitor and caretaker. The contract for the school completed is estimated at about 13,000*l.*, and the building will give accommodation for about 1,250 scholars. The contractors were: Mason, Mr. David Winton, Dalmuir; wright, Mr. Alexander Ferguson, Glasgow; plasterers, Messrs. H. & J. Williamson, Clydebank; plumbers, Messrs. Speirs & Sons, Glasgow; slater, Mr. John Anderson, Glasgow; painter, Mr. Alexander Anderson, Glasgow; heating and ventilating, Messrs. Keans & Wardrop, Glasgow; master of works, Mr. John Rodie. The architect was Mr. Henry Higgins, Glasgow.

INTERMEDIATE SCHOOL, LLANBERIS.—Plans for this school are being prepared by Mr. Rowland Lloyd Jones, architect, Carnarvon.

PROPOSED NEW THEATRE, BIRMINGHAM.—It is proposed to erect a new theatre for Birmingham on the site now occupied by the circus in Corporation-street. The Corporation-street frontage will be devoted to eight shops, with either residential chambers or offices above. The property on the Dalton-street side will be utilised as warehouses and business premises. The stage, at the James Watt-street end of the site, will be 70 ft. wide by 45 ft. deep, with the necessary dressing-rooms, scene-dock, dynamo-room, &c. The pit, which will be on the floor level, will provide accommodation for 800 persons, with 150 stalls in front, the incline of the house, together with the sweep of the circles and gallery, being so arranged as to command an uninterrupted view of the stage from all parts. The pit entrance will be in Ryder-street, a covered recess being provided. The dress circle and stalls will be reached by a vestibule and staircase in marble and mosaic, opening out at the corner of Corporation-street and Ryder-street. The private boxes will be placed at the extreme back of the circle. The dress-circle will seat 275 persons. The scheme of decoration will be Moorish throughout. Mr. Frank Matcham is the architect.

THEATRE, DUDLEY.—The contract for "Dudley Opera House," the new theatre to be erected in Birmingham-road, Dudley, by Mr. J. Clement, has been secured by Messrs. J. H. Whittaker & Co., of Dudley. Mr. Abraham Ramsell, of Dudley, is architect, and Mr. Bray, Smethwick, clerk of the works.

THEATRE, BORDESLEY, BIRMINGHAM.—Plans have been prepared by Messrs. Owen & Ward, of Birmingham, for a theatre to be built at the corner of Clyde-street, Bordesley. The building will have a frontage to High-street, Bordesley, of 100 ft. The stage will be 70 ft. by 45 ft., and the auditorium, 70 ft. by 65 ft., will accommodate 2,700 persons. Above the pit there will be but two tiers—dress circle and gallery—and these are to be erected on the cantilever principle.

PROPOSED PRINCE'S THEATRE, NORWICH.—Plans of the proposed Prince's Theatre, Norwich, have been prepared by Mr. Sidney Stott, of Oldham. The main entrance to the proposed building will be in Prince of Wales-road. The theatre will contain from 2,000 to 3,000 seats—pit, dress circle, and gallery. A covered corridor will run from Prince of Wales-road right through into Greyfriars'-lane.

BANK, KINGSWOOD, NEAR BRISTOL.—Bank premises are being erected at Kingswood, on a site close to the entrance to Kingswood Moravian Church in Regent-street. Plans were prepared by Messrs. Henry Crisp and Oatley, of Bristol, and the construction of the new building was placed in the hands of Messrs. W. Cowlin & Sons. The room on the ground floor, to be used for general banking purposes, is 24 ft. by 23 ft. in extent. To the left of it is the manager's office, adjoining which is a fire-proof strong room. A book-room and other premises for the bank's business are provided, and there is residential accommodation for the manager.

HOTEL, OLDHAM.—At a recent meeting of the Oldham Licensing Justices, a plan for the alteration and extension of the "Duke of Edinburgh" Inn, King-street, was submitted by Messrs. Wild, Collins, & Wild, architects, and approved by the justices.

CHURCH OF ST. PATRICK, GALWAY.—The Church of St. Patrick, Galway, has just been rebuilt. The architect was Mr. William Hague, Dublin, and the contractor Mr. Lydon, Galway. The church, which has been built in the Gothic style, is divided into nave and chancel, with side porches, sacristy, and an organ loft at the end of the chancel. Immediately behind the altar the church is lighted by a large tracery window of cathedral glass variously tinted.

POST OFFICE SAVINGS BANK.—The House of Commons have agreed to a vote of 45,000*l.* for the purchase of a site near Olympia, West Kensington, for the erection thereon of a new Western Savings Bank. The proposed buildings will cost, it is estimated, 180,000*l.*, and will serve in lieu of the once-contemplated further extension of the buildings in Queen Victoria and Knightrider streets, which, it seems, are eventually to be devoted to postal purposes.

BUSINESS PREMISES, BRADFORD.—With the erection of the block of new buildings by Mr. George Newby, the improvement of Union-street, Bradford, is now practically completed. The block is 207 ft. in length, 73 ft. from front to back, and 67 ft. high, and its erection has been accompanied by a widening of the street from 12 yards to a uniform width of 18 yards. The new building is five floors in height, divided into five warehouse blocks, for each of which will be provided a crane worked by electricity, and the premises will be lighted with the electric light. The structure is of stone, with brick lining, and the roofs are of slate and glass. The architects have been Messrs. James Young & Co., of Bradford. Messrs. A. Braithwaite & Co., of Leeds, have been the contractors for all the work except the carpentry and joinery, which has been carried out by Mr. W. G. Bogg, of Bradford.

PROPOSED ADDITIONS TO LOWESTOFT SANATORIUM.—The Corporation of Lowestoft having applied for leave to borrow 1,400*l.* for the erection of an additional pavilion to the Infectious Diseases Hospital, Dr. Mivart, one of the Local Government Board inspectors, held the usual inquiry recently at the Town Hall. The plans were explained by the Borough Surveyor (Mr. G. Hamby).

TECHNICAL SCHOOLS AND FREE LIBRARY, MIDDLEWICH.—On the 16th inst., the foundation stone was laid of the custodian's cottage in connexion with the new technical schools and free library which are being erected at Middlewich. Mr. Worth is the architect, and Messrs. Clarke & Son are the builders.

COTTAGE HOMES, STYAL, CHESHIRE.—The cottage homes for pauper children, which the Chorlton Board of Guardians are erecting in the neighbourhood of the village of Styal are approaching completion. The architect is Mr. J. B. Broadbent. Altogether the Guardians have expended about 50,000*l.* upon their scheme, apart from the cost of the land.

HOTEL WELLINGTON, TUNBRIDGE WELLS.—This building has been altered and enlarged under the superintendence of the joint architects, Colonel Edis, F.S.A., of London, and Mr. W. Barnsley Hughes, of Tunbridge Wells, Mr. W. H. Canty acting as clerk of the works, whilst Mr. John Jarvis was the contractor. A lift has been erected by Messrs. Waygood & Co., London.

THE HORNIMAN MUSEUM, DULWICH.—A few weeks hence work will be begun upon the Horniman Free Museum, which its founder, Mr. Frederick J. Horniman, M.P., intends to present to the inhabitants of Dulwich. The new building will consist of two galleries, each upwards of 100 ft. long, lighted from the top. In addition, there will be a lecture-hall, having a seating capacity for 300 persons. Altogether the museum, including the administrative block, will be some 300 ft. in length, its front being constructed of stone, with a clock tower over 100 ft. in height. The galleries will be divided into various courts. The architect of the new museum is Mr. C. Harrison Townsend.

HOTEL ADDITION, DEESIDE, ABERDEENSHIRE.—A large extension is to be made at the "Learney Arms" Hotel, Torphins. The architects are Messrs. Jenkins & Marr, Aberdeen, and the contractors are: Mason, J. Burgess & Son, Aboyne; carpenter, W. Duguid & Son, Ballater; slater, Andrew Davidson, Banchory; plasterer, Geo. Merson, Banchory; plumber, A. B. Robertson, Aberdeen.

CATHOLIC CHURCH AND SCHOOLS, BURSLEM.—A new block of buildings, including both schools and chapel, has been erected in Hall-street, Burslem. The schools occupy the lower story and comprise a mixed school with places for 224 children, with separate entrances and cloak-rooms for both sexes; an infants' school with places for 130 children, with cloak-rooms, &c. The church is on the upper floor, and provides accommodation for about 380 persons, and has a gallery for choir at one end, and a sanctuary, with priest and choir sacristies, and two staircases. This church is only temporary in its use, as when the permanent church is built on the site adjoining, the upper floor will be used to

provide additional school accommodation, for which purpose it has been planned. The builder is Mr. William Cooke, of Burslem, Messrs. Barlow & Son having done the gasfitting and painting under him. The heating is on the high-pressure small-bore system, executed by Messrs. John King & Co., Limited, of Liverpool. Messrs. R. Scrivener & Sons are the architects.

HOTELS, DUBLIN.—Members of the Architectural Association of Ireland visited recently two buildings in course of erection and renovation for the Central Hotel Company, Limited, Dublin. The members assembled at Exchequer-street at 2.30, and were received and conducted over the building there by the clerk of works, Mr. F. Hayes. The work is being carried out by the contractors, Messrs. M. Meade & Son. The exterior is faced with red Portmarnock brick, having Portland stone cornice and dressings. The party next proceeded to D'Olier-street, where they looked over the Central Restaurant. The constructional work has been carried out by Mr. Kinnan, and the decorations by Messrs. Gibson & Sons. Both these buildings have been designed by the Hotel Company's architect, Mr. William M. Mitchell, R.H.A.

PUBLIC HALL, PITSEA.—A public hall to seat 450 people is now in course of erection at Pitsea, Essex. The work is being carried out by Mr. Joseph Bayliss, of Forest Gate, E., from designs by Mr. Arthur T. A. Bowyer, of London.

PROPOSED PUBLIC HALL, BRIGHOUSE.—It is proposed to erect a new public hall, to be known as the "Victoria Hall," in Huddersfield-road, Brighouse. The structure will be composed mainly of brick, but a stone front facing Huddersfield-road is intended. The centre of the lower story of the building is divided into three shops. The pit, or area, is below the level of the road, and is approached by a special entrance on the north side from Huddersfield-road. The dimensions of the floor space are about 57 ft. square, and seating accommodation will be found for about 900 persons. The dress circle, on the second floor, is reached by a door at the south corner of the building. Behind the dress circle, and on separate sides, are located ladies' and gentlemen's lavatories and cloak-rooms, while between, and over the three previously-mentioned shops, a sloping gallery is placed, with a small promenade in front. It is calculated that 700 persons can find sitting room here. The stage is shown 48 ft. wide by 25 ft. deep, with a proscenium opening of 28 ft. Dressing-rooms for lady and gentlemen artistes are also connected with the stage. Plans of the building have been prepared by Messrs. Sharp & Waller, architects, Brighouse.

SANITARY AND ENGINEERING NEWS.

SEWERAGE SCHEME, SWANAGE.—A Local Government Board inquiry was held at Swanage recently by Mr. H. H. Law, one of the Board's Inspectors, concerning the application of the Urban District Council to borrow a sum of 8,500*l.* for sewerage purposes. Mr. Francis Newman, the Engineer, laid the plans before the Inspector and explained their details.

TUNBRIDGE WELLS WATER SUPPLY.—The Borough Surveyor (Mr. E. Mellor) has just submitted to the Waterworks Committee of the Town Council a scheme for new filtration works at Pembury, where the reservoirs are situate. The estimated cost of the scheme will be about 20,000*l.*, and before the next meeting of the Council Mr. Strachan, engineer, is to be consulted.

DOCK BOARD'S NEW WORKS, LIVERPOOL.—In compliance with the requirements of Parliament estimates have been deposited in the Private Bill, Office of the House of Commons, showing the expenditure which will have to be incurred by the Mersey Docks and Harbour Board in the event of Parliament sanctioning the numerous new works proposed to be constructed under their New Works Bill of the present session. The total cost of the whole of the new works is put down at 3,651,204*l.*, the details being as follows:—Enlargement and alteration of Wapping Dock, 148,386*l.*; two branch docks on the site of King's Dock and the warehouses and quay adjoining, 451,617*l.*; a new and enlarged cut or passage between Wapping Dock and Queen's Dock, with swing bridge, 83,236*l.*; widening and deepening of Queen's Dock, 112,217*l.*; new graving dock and works connected therewith, 159,133*l.*; branch dock on the sites of the northern portions of the Queen's Graving Docks, the south quay of Queen's Half-tide Dock, and the shipbuilding yards between the graving dock and the river Mersey 275,284*l.*; a second branch dock on portions of the site of Trafford Dock and Eagle Basin and the shipbuilding yards above mentioned, 285,067*l.*; a new and enlarged cut from Queen's Dock to Coburg Dock, with swing bridge, 83,324*l.*; deepening Coburg Dock, 5,678*l.*; alteration of Coburg Dock by filling up the recess on the north side and removing part of the pier, 89,460*l.*; a new and enlarged cut from Coburg Dock to Brunswick Dock, with swing bridge, 82,324*l.*; deepening Brunswick Dock, 142,125*l.*; widening Union Dock, together with an enlarged passage between it and Brunswick Dock, with swing bridge, 158,319*l.*; new graving dock partly on the site of the Western Brunswick Graving Dock, 155,403*l.*; new entrance from the River Mersey into Brunswick Dock, with locks, 396,190*l.*; a river wall from the Eagle Basin to the North Pierhead, including the raising of the existing wall in front of the shipbuilding yards between Queen's Graving Docks and the River Mersey, 49,192*l.* In addition to these works, known as "the Southern Works," the estimates include the following proposed "Northern Works":—Widening of Huskisson Dock and the construction of a branch dock therefrom, 482,783*l.*; widening of the Half-tide Dock and the construction of a graving dock therefrom 202,813*l.*; a branch dock on the site of the southern portion of the Sandon Dock, 199,738.—*Liverpool Courier.*

WATER SUPPLY, DOUGLAS.—The Water Committee of the Douglas Town Council have under private consideration the report of Mr. George H. Hill, water engineer, just received, on a scheme of increased water supply for the town of Douglas. Kerrowdhoo, the last reservoir of the company, with a storage capacity for about 25,000,000 gallons, was completed about five years ago. Mr. Daniel Cregeen, the Manx engineer, at that time advised a larger scheme at Ingebreck. Mr. Hill's report, now under private consideration, is for a new reservoir in West Baldwin at a point lower on the river than Ingebreck, having an area of about twenty-five acres, and to contain 300,000,000 gallons. The reservoir must be this size if compensation water is to be provided for mill works in Douglas river, and the cost will be 50,000*l.* but if compensation is given in money instead of water, a reservoir with a capacity for 180,000,000 gallons will be sufficient, and will cost about 8,000*l.* less. The supply from the larger reservoir, after allowing ample for water compensation, will be 1,500,000 gallons per day, which, added to the present gravitation supply, will give a total supply of 2,500,000 gallons per day. If a compulsory Act for the carrying out of the work is obtained for promulgation in July, the reservoir may be ready for use for the fourth season from now. The scheme will shortly come before the Council in public discussion.

PROPOSED NEW BRIDGE, HADDINGTON.—It is proposed to erect a new bridge over the Tyne at Haddington, the construction of which Messrs. Belfrage & Carfrae, C.E., who have been consulted on the subject by the Town Council, have recommended.

NEW DOCK, LLANELLY.—The first sod of a new dock for Llanelly, to be constructed by the local authorities, has just been cut. For the last dozen years the Harbour Commissioners have been engaged in the work of improving the seaway channels. This work has been carried on at the cost of over 20,000*l.*, and it is still proceeding under the direction of Sir Alexander Rendel, as consulting engineer. The new dock is on property belonging to the Commissioners. It is skirted by the G.W.R. trunk line, and the wharves will be in communication with a number of local railways. The dock contract has been entrusted to Mr. Nott, his portion being estimated to cost about 60,000*l.* The area of the dock will be 9 acres; length, 1,000 ft.; breadth, 400 ft.; quayage, 1,200 ft.; depth on sill, 27 ft.; width of entrance, 50 ft. The work will be conducted under the supervision of Sir Alexander Rendel and Mr. Colin P. Fowler, resident engineer.

DRAINAGE SCHEME, KINGSWOOD, NEAR BRISTOL.—On the 17th inst. a meeting of Kingswood Urban Council was held with a view to receive reports from Mr. Lomax (engineer) and Major Tullock respecting the district drainage scheme. The Chairman explained that they not only wanted to borrow sufficient money to carry out the sewerage scheme, but also to borrow some 6,000*l.* or 7,000*l.* for their electric lighting. Mr. Lomax (the appointed engineer for the scheme) said he had been through the whole of the sewers with Major Tullock with the object of putting on one side for ten or fifteen years that portion of the scheme which was not absolutely necessary for the present time. Their object in preparing a large scheme was so as to arrive at an idea of what would ultimately be carried out—one in fact that they might work up to. The Council, after going over the ground, had decided that there were certain of the sewers which might be left out for a time. That reduced the estimate from 60,000*l.* to about 51,000*l.* He suggested, after consulting with Major Tullock, submitting the whole scheme, and only to ask sanction for that portion of the work which might be immediately necessary. Mr. Lomax then went on to detail certain other alterations which would reduce the cost for the time being to 38,159*l.* Various questions were then put to, and answered by Major Tullock and Mr. Lomax.

SHERBORNE SEWERAGE SCHEME.—On the 15th inst. Mr. Walter A. Ducat, Local Government Board Inspector, held an inquiry into the application by the Sherborne Urban District Council for sanction to borrow 8,000*l.* for works of sewerage and sewage disposal. Mr. Thomas Farrall, the Council's Engineer, gave evidence as to the new outfall and other sewers to be constructed. The sewage on leaving the 2 ft. outfall sewer passes into screening and detritus chambers, then to mixing chambers, and thence into two Candy circular precipitation tanks, 23 ft. in diameter by 13 ft. deep, fitted with automatic sludge-removal apparatus, and finally on to the oxidising and aërating polarite filter-beds. The two precipitation tanks have a capacity of 40,000 gallons each, and are capable of efficiently treating upwards of 400,000 gallons per day, and the four polarite filters, each of 135 square yards, will effectually purify 500,000 gallons per day. The Engineer stated that on account of the small tank and filter-bed area required for the "International" process, the system was the most economical, it being much cheaper than those methods which involved the use of very large areas of tanks and filters.

MANCHESTER SEWAGE EFFLUENT TREATMENT.—The report of the Effluent Sub-Committee of the Manchester Rivers Committee was considered by a special meeting of the Committee on the 18th inst., and was practically adopted. The City Surveyor submitted estimates for various sections of the work, which amount together to about 127,000*l.*, for covering thirty-five acres with bacteria beds. The Committee decided to begin operations with an area of four acres only.

THE WATER SUPPLY OF BIRMINGHAM.—On the 18th inst. Mr. C. E. Mansergh, C.E., delivered a lecture at the Royal Institute, Albemarle-street, on the bringing of water from Wales to Birmingham. Mr. Mansergh said the area of the city of Birmingham was 12,000 odd acres, and the limits of the supply covered over 83,000 acres, or 10 per cent. in excess of that of the county of London. The district varied very considerably in elevation, being 270 ft. above sea level in one place, and 800 ft. above sea level in another. The population was now about 700,000. In 1890 he was called in by the Corporation, and it was on his advice that the Corporation promoted the Bill of 1892 for the utilisation of the waters of the rivers Elan and Claerwen, tributaries of the Wye. The collecting area was 45,562 acres. Taking the mean of three dry years, the rainfall in one year would leave available 165,000,000 tons. He was satisfied they could obtain 75,000,000 gallons daily for their supply. The length of drought guaranteed against was 180 days, which necessitated a storage of 18,000,000,000 gals. A unique feature in the scheme was the provision of a submerged dam, to be built across the Cabanloch Reservoir, a mile and a half above the main dam, the chief object of which was to hold the water up behind if high enough to charge the aqeduct conveying the water to Birmingham. The scheme was such that it could be carried out in instalments, reservoirs being made as required. When the Caban dam was finished the total pressure against its exposed face would be 60,000 tons. Each dam when completed would be practically a monolith, only removable by some great convulsion of nature. In the lower parts of the valleys there was some cultivated land, which would for the most part be occupied by reservoirs, roads, and railway. The old manor house of Nantgwillt and Cwm Elan House, for awhile the residence of Shelley, with other buildings, would be "drowned."

STAINED GLASS AND DECORATION.

MEMORIAL WINDOW, MOSELEY.—At the Oxford-road Baptist Church, Moseley, a new memorial window in the chancel was recently dedicated. The window consists of two lights and tracery. The subject illustrated in the first light is the finding of Christ in the Temple. In the second, Christ is receiving and blessing little children. The work was entrusted to Messrs. J. Hardman & Co., of Birmingham, and carried out under the personal supervision of Mr. D. J. Powell.

FOREIGN.

FRANCE.—The death of M. Ginain has left vacant the place of Professor in one of the ateliers of architecture at the Ecole des Beaux-Arts. The candidates for the post are MM. Scellier de Gisors, Blavette, Deglane, Redon, and Chedanne.——The Sèvres manufactory has received the commission to execute a frieze in coloured stoneware for the façade of the large palace at the Champs Elysées. M. Joseph Blanc is to make the design.——M. Falguière has been commissioned to execute a statue of the celebrated Dr. Charcot, to be erected at the *place* adjoining the Hospital of the Salpêtrière.——M. Mercié has just completed the statue of Alfred de Musset, but it is not settled yet where it is to be erected.——The Municipality of Paris is carrying on the works for the construction of a new Lunatic Asylum in the district of Ville-Evrard, near Paris. It will include twelve pavilions for men and eight for women, and will provide for 1,200 patients. This will be the fifth new establishment of this kind, and will be completed by 1900.——The French Government proposes to rebuild, on a larger scale, the National Conservatoire of Music. In the meantime the school will be temporarily transferred to the Caserne de la nouvelle France, near Rue Lafayette.——At Louint, near Poitiers, a funeral cave or sepulchre has been discovered, of the end of the fourth century, containing stone sarcophagi in which have been found various objects of considerable archæological interest.——M. Loret has discovered, at Thebes, the tomb of Amenophis II., as well as a number of sepulchral objects—statues, vases, &c.——The death is announced of M. L. G. Coffinières, of Nordeck, landscape painter, and a pupil of Meissonier, who also exhibited at the Salon Algerian subjects and *genre* pictures, as well as studies of mediæval life and

costume showing a good deal of research.——The death is also announced, at Limoges, of M. Louis Charles Geay, a former pupil of the Ecole Centrale des Arts et Manufactures, and who was architect for a good many châteaux in the Departments of La Creuse and Haute-Vienne. He also restored various religious edifices in the Limousin, especially the churches of St. Valère and St. Joseph at Limoges. He held the post of Diocesan Architect in that town, and assisted in the works at the cathedral and at the churches of Dorat and Solignac, which are classed as "monuments historiques." He was fifty-four years old. He had been, since 1894, a member of the Société Centrale des Architectes.

AUSTRIAN JUBILEE MONUMENTS.—The Jubilee fever is at present affecting Austrian architecture, as in 1887 and last year it affected the architecture of Britain. An imposing monument of the Imperial Jubilee is to be erected at Olmütz, in Moravia, with the sculpturing of which Professor Brenek, of Vienna, has been entrusted. At his suggestion it has been decided to adapt a monumental fountain beside the town hall, as the background to the memorial; an angel's figure is to be added, symbolising the advancement of the town of Olmütz; the figure is to point to the statue of the Emperor, indicating him as the author of the town's progress. An inscription is to be placed on the plinth of the fountain.

WORKING CLASS DWELLINGS AT THE PRAGUE EXHIBITION.—The universally-felt need for these buildings is to receive practical attention at the exhibition of architecture and engineering to be held this year at Prague. Section III. of Group A is to be devoted to the subject of homes for artisans, farmers, and officials, and is to consist of an exhibition of sketches, accompanied by clear explanations. To encourage the sending of these sketches, an open competition is announced, according to the *Wiener Bauindustrie-Zeitung*. Our contemporary, however, does not publish the details.

BOTANY.—At a recent meeting of the Botany Council the aldermen had under consideration the choice of a set of plans for a town hall, which they propose to erect on a site recently purchased by them, with a frontage of 100 ft. to the main road, and a depth of 350 ft. to a street at the rear. The site is in the centre of the borough. About a dozen designs were sent in, and the Council decided to award the first premium to Mr. B. Hadley, architect.

CALCUTTA.—A new block of buildings in connexion with the Calcutta General Hospital, and in its immediate vicinity, is in course of erection. The designs of the new building were prepared by Mr. W. Banks Gwyther, A.R.I.B.A., Under Secretary, Public Works Department.

AUSTRIA.—The town of Korneuburg, Lower Austria, is to be lit with electric light. The development of the use of electricity in Austria is at present very remarkable; every week brings the announcement of new electric railways, cranes, light installations on a large scale, &c.——The site for the new theatre has been chosen at Graz.——New military buildings are to be erected in Marburg.——It is proposed to demolish the old lock-up in the Bartholomäigasse at Prague, leaving only the interesting tower (a relic of the ancient fortification of the city). On its site a new lock-up, and other buildings for the use of the Department of Public Safety, are to be erected. Careful attention is to be paid to sanitation and to the complicated requirements of the department. The designing of the work is entrusted to Herr Ferdinand Havlicjek and Herr Cjervinka, the former of whom will be occupied with the technical details, the latter with the superintendence of the works. Messrs. Fischer & Dvorjak are the contractors. The estimated cost is 110,000 florins, exclusive of site and fittings. It is expected that the building will be ready for its purpose in une of next year.——The town of Aussig is about to be enlarged. A considerable extent of ground is to be acquired for building sites, and a committee has been appointed to raise and administer a fund for the necessary works.——It is proposed to quarter an Infantry regiment at Hohenmauth, Bohemia, on October 1 next. For their reception an entirely new set of barracks is to be built. An orphanage is about to be erected in the same town under the management of the Convent of Notre Dame in Horazjdovic.——It is proposed to build a new central poorhouse in Buda-Pesth, and the selection of a site is at present being discussed.——The plans for the proposed Agram Barracks have been finished by the architect, Herr Josef Holjac, and have been submitted to the municipal magistrate. The magistrate must now summon the joint committee, whose duty it is to pass or reject the plans. When their approval is ratified by the Minister of Public Defence the work will be put in hand at once. It is expected that the building will be roofed in next summer.——An exhibition is to be held in Steyr, Upper Austria, between August 18 and September 18, devoted to the industries of Upper Austria. The machines used in various departments of human activity will be shown. This exhibition will be held in connexion with the opening of the museum of art-history and the permanent crafts exhibition in the new Industrial Palace.——The last date for receiving exhibits for the Brüx Exhibition has been postponed from March 1 to April 1.——The quay at Linz is to be lengthened, and the erection of two warehouses (one of them the property of the Danube Steamship Company), together with an electric crane, is to be proceeded with at once.

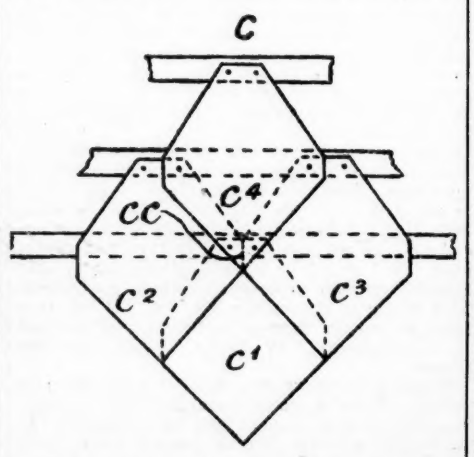
MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—In consequence of the late offices of the Metallic Paving and Artificial Stone Company, Limited, 86 and 87, Strand, W.C., being required for the Strand Improvements, the Company have removed to Amberley House, 12, Norfolk-street, Strand, W.C.

SANITARY INSPECTORSHIP, EDINBURGH.—A sub-committee of the Public Health Committee of Edinburgh Town Council had under consideration on the 11th inst. the regulations to be enacted by the Magistrates and Council, as the Local Authority under the Public Health Act, for the performance of the duties of the new office of Sanitary Inspector. It was agreed to recommend that the salary attached to the office should be 400*l.* per annum. In addition to the duties imposed by statutes and by orders issued by the Local Government Board, it is stipulated that the officer to be appointed shall perform any other duties which may be attached to the office by statute, by orders of the Local Government Board, or by order of the Magistrates and Town Council. Among other things, it is proposed that the new officer shall carry out the provisions of the Act of Parliament relating to common lodging-houses, the inspection of dairies, the sweeping, washing, ventilating, and painting of common stairs and passages, the provisions of the City Acts in regard to small dwelling-houses, and the provisions of the Shop Hours' Act.

BUILDING TRADES FEDERATION, ROTHESAY.—A meeting of the recently formed Bute Building Trades Federation, Rothesay, has just been held, Mr. William Stewart presiding. The report of the committee appointed at the last meeting was presented, and the constitution and rules adopted. The following are the office-bearers:—President, Dean of Guild M'Bride; Vice-President, Mr. William Hunter; Executive, John Lyle, William Lauder, W. M. Leckie, Matthew Duncan, Daniel Cunningham, John Cruickshanks, jun., and Wm. Stewart; Secretary and Treasurer, William M'Intosh. The objects of the Federation as stated in the constitution are to encourage and maintain cordial relations between employers and operatives, and adjust differences that may from time to time arise; to secure united action in dealing with restrictive conditions sought to be imposed on the building trades; to secure recognition by architects, measurers, and others of a fair and reasonable form of contract between contractors and their customers; to secure the adoption of suitable rules for measuring work and the prompt and satisfactory adjustment and settlement of contractors' accounts.

NEW METHOD OF LAYING SLATES.—The Dublin Slating Company send us a copy of the patent specification for their method of laying slates, patented about two years ago, but hitherto apparently used only in Ireland. The diagram, with a quotation from the specification, explains the method and the advantages claimed for it. The slates are prepared by removing a part of the slate at two of the opposite angles (see diagram). "*c*1 is first placed in position and secured by nails as shown; *c*2 and *c*3 are placed side by side meeting at *c. c.* and likewise secured; *c*4 is then laid as shown. Thus where each joint occurs, as at *c c*, a slate or tile is fixed under, as *c*1, and one over, as *c*4; the entire surface covered with the slates or tiles is then perfectly staunch and waterproof. The width of lap given to the slates can be varied as desired by



altering the size of the angles removed. The slates or tiles can be fixed either on laths or sheeting, and the position of the nail holes adjusted as desired. If tiles are laid on laths, they are hung on laths by ordinary nibs and then nailed. The following example illustrates the saving in materials effected by the invention. In ordinary slating having a 3 in. "lap" a 12 by 12 slate has a "cover" of 54 square inches; by using this invention a 12 by 12 slate with a 3 in. "lap" has a cover of 81 square inches. Thus there is a large saving in materials and consequently much less weight to be sustained than in ordinary slating or tiling." We have not tested the calculation as to the area acquired, but the method certainly seems likely to make a compact roof with a strong bond for the slates. The cutting of the corners, however, is of course an item in the cost of labour which must be taken into account.

ARBITRATION IN ENGINEERING AND BUILDING CONTRACTS.—The Town Clerk of Dundee reported to a recent meeting of the Works Committee of Dundee Town Council that, as instructed, he had written to Edinburgh, Glasgow, and Aberdeen inquiring whether a neutral person was appointed to act as arbiter, or whether the Burgh Surveyor or Engineer was appointed sole arbiter, in engineering and building contracts for work to be executed for the Corporation. He read letters from the Town Clerks of Glasgow and Edinburgh, which stated that it was the practice to have a neutral person acting as arbiter on all engineering and building contracts of importance. The Committee resolved that no arbitration clause should be inserted in any contract.

LEEDS STREET IMPROVEMENTS.—The Local Government Board have granted a Provisional Order for the construction of a street from Briggate through the Shambles into Vicar-lane, parallel with Kirkgate. The street, it is stated, is one whose cost—estimated at 30,000*l.*—is to be defrayed by the Leeds Estates Company, on account of the enhanced value the new thoroughfare will put upon their adjoining property. The only cost it will entail on the Corporation is 1,000*l.*, the amount of sewering and flagging.

THE LONDON COUNTY COUNCIL'S MONEY BILL.—The Council will apply to Parliament in the current Session for leave to introduce a Bill for the following (with other) purposes:—To acquire a site for and to provide a Council Chamber and offices; provision of workshops, buildings, machinery, &c., for technical schools, precipitation, and other works at pumping stations and outfalls; sewerage works, including new main and relief sewers, sites for gas-meter testing stations and apparatus, and sites for building and enlarging lunatic asylums; purchase of White House, Hackney Marsh, the freehold of Fairseat House, Waterlow Park, and of property for improving the eastern approach to Lambeth Bridge, and the northern approach to Tower Bridge, and widening the Strand and the south end of Tottenham Court-road; stations and sites for the verification and stamping of weights and measures, and the provision of standards and appliances; sites for Coroners' Courts; the acquisition and planting of open spaces; improvement of Evelyn-street, Deptford, Woodlane, Hammersmith, Ben Jonson-road, and Blackstock-road, Islington; Highgate Archway, Barking-road Bridge and approach, and the reconstruction of the Isle of Dogs bridges; purchase of tramways; and providing sites for stations, buildings, piers for river stations, new floats, and plant for new stations, and hydrants for the purposes of the Fire Brigade Act, 1865.

"AUTOGRAPHIC" COPYING PROCESS.—The Autographic Company (London and Middlesborough) have produced what seems a very useful process for the multiplication of writing, which can also be applied to drawings of a simple kind, hand sketches of detail, &c. The writing or sketch is done with a prepared ink on a chemical paper, and faced down on a plate with an inked surface; the chemical on the paper "kills" the ink except where the lines have been drawn, and impressions can then be taken off on ordinary paper, to the number of about 300, with only a moderate hand pressure on the back of the paper. It may be very useful for copies of specifications, among other things.

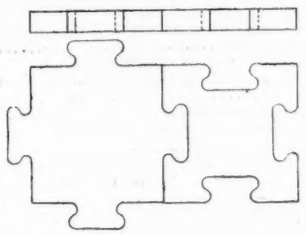
SOCIETY OF ANTIQUARIES OF SCOTLAND.—The usual monthly meeting of this Society was held in the library at the Museum, Queen-street, Edinburgh, on the 14th inst. The first paper, by Sheriff Mackay, LL.D., Q.C., F.S.A.Scot., was entitled "Notes and Queries on the Custom of Gavelkind in Kent, Ireland, Wales, and Scotland." In the second paper Mr. David Macritchie, F.S.A.Scot., discussed the question of the frequent occurrence in British topography of the words "man," "men," and "maiden," principally in place names applied to stones and rocks, and assigned the origin of these names in the majority of cases to the Cymric words "man," "men," or "mêdn," signifying a rock or stone. In the third paper Mr. A. G. Reid, F.S.A.Scot., Auchterarder, gave an account of the state of the ruins of the Abbey of Inchaffray in 1789, compiled from the correspondence of General Hutton with Mr. John Dow, then the tenant of the Abbey. When Mr. Dow wrote, the only part of the Abbey remaining was the north gable of the house where the clergy lived. On the east or north-east side of the area stood the church and steeple. The latter fell in the end of the reign of Charles II. On the south-east side of the church was the burial ground. On the south side was the Charter house and the Abbot's house, to which water was conducted in leaden pipes from the Lady Well. On the west side were the houses of the clergy, and beyond them a fruit garden. The whole of the buildings were surrounded by a wall of ashlar work, and outside the wall by water, the access from the south being by a bridge over the Pow, and on the north-east by a stone causeway 60 ft. broad. The different parts of the monastery were pulled down at different times to supply material for

modern buildings. In the fourth paper Mr. J. T. Irvine, F.S.A.Scot., gave descriptions of some sepulchral cairns discovered by the blowing of the sand on the sands of Bracon, in North Yell, Shetland, and of a sculptured stone discovered at South Garth, in the island of Yell, and subsequently lost. The tops of the cairns were first made visible in 1862, and Mr. Irvine made plans and partial excavations in 1863. In 1897 Mr. Irvine again visited the cairns, finding them further exposed to the depth of several feet, and made rough plans and notes to place the facts on record, as the sand is beginning to creep over them again, and they will soon be covered up and forgotten. The sculptured stone found at South Garth upwards of forty years ago was seen by Mr. Thomas Irvine at the peat bank where it was found, and is described by him as covered on both sides with figures of men and ornament.—*Scotsman.*

NORMAND'S "PARALLÈLE DES ORDRES."—The resuscitated copies of this book, referred to in our second article of last week's issue, can be obtained from M. Thézard *fils*, 36, Great Titchfield-street.

SURVEYORSHIP APPOINTMENT.—Mr. George Green, recently Assistant Surveyor to the Islington Vestry, has been appointed Surveyor to the parish of St. Martin-in-the-Fields, in succession to Mr. Charles Mason, who resigned his appointment.

INTERLOCKING RUBBER TILES.—These tiles, of which a sample consisting of a square of nine tiles put together has been forwarded to us, are apparently an American patent, and are in very extensive use in the States, more particularly on railway platforms and for the cabin floors of large steamers. We have received a comparative schedule of tests of this and other flooring materials for wearing qualities, as tested on rubbing wheels, and which gives it a very high efficiency in that respect. We cannot of course accept as conclusive a result of tests made *ex parte* and in the interests of the patentees; but we are nevertheless of opinion, from the examination of the



specimen submitted to us, that this is an exceptionally good flooring material for the kind of purpose to which it has been hitherto most applied. It combines a hard and smooth surface with a remarkably good foothold; it would in fact be almost impossible to slip on it, while at the same time it appears to be washable like ordinary tiles. The diagram shows the manner in which the tiles are put together; they can be made of various colours, and patterns can be wrought in them. It is a material which certainly is worth the attention of English architects and engineers. Mr. A. L. Gibson, of the Folding Gate Company, is the agent in England for these tiles.

BRIGHTON BUILDING BY-LAWS.—At an ordinary meeting of the Brighton Town Council, held at the Royal Pavilion, on the 17th inst., the Improvements and Buildings Committee, in a special report, submitted a draft of amendments to the by-laws made by the Council on September 2, 1886, relating to new streets and buildings, and recommended that the same be approved by the Council and forwarded to the Local Government Board for their preliminary approval. The Committee's recommendations were as follow:—Sites and Foundations: 1. From and after the confirmation of these by-laws, the by-law numbered 17 of the series relating to new streets and buildings, confirmed by the Local Government Board on September 2, 1886, shall be repealed. 2. All mould shall be removed from the site of a domestic building, and the whole surface of such site shall be properly asphalted or covered with a layer of good cement or lime concrete rammed solid, at least 6 in. thick, provided that if the subsoil of such site be either solid chalk or solid coombe rock, it shall not be necessary to lay any such asphalte or concrete of greater thickness than 4 in. In this by-law the word "site" includes the whole surface of the ground which any building is intended to occupy or cover. Height and thickness of walls: 3. From and after the date of the confirmation of these by-laws, the by-law numbered 25 of the series relating to new streets and buildings, confirmed by the Local Government Board on September 2, 1886, shall be amended by adding to sub-section (*b*) of such by-law the following proviso, namely: Provided that where the topmost story comprises only a room in the roof extending over not more than two-thirds of the area of the floor of such roof, every external and party-wall of such building shall be 13½ in. thick below the first floor, and 9 in. thick for the rest of its height. Roofs: 4. In every building in which a room is constructed in the roof, such roof shall be close boarded, and covered with felt above the rafters before the slating or tiling is put on. 5. Every person who shall offend against the foregoing by-laws shall be liable for every such offence to a penalty of 5*l.*, and in the case of a continuing offence to a further penalty of 40s. for each day after written notice of the offence from the Council. Provided, nevertheless, that the Justices or Court before whom any complaint may be made or any proceedings may be taken in respect of any such offence may, if they think fit, adjudge the payment as a penalty of any sum less than the full amount of the penalty imposed by this by-law.—The ex-Mayor said he was sorry the Committee did not see their way clear to go a little beyond what they were offering the Council that day. He quite approved of all they asked, but thought it would have been very much better if the whole of the by-laws had been gone into and many other very important improvements drawn up at the same time for the Council's approval. The report was adopted.

CAPITAL AND LABOUR.

THE STRIKE OF PLASTERERS, FLEETWOOD' LANCASHIRE.—The Fleetwood masters have agreed to give the advance applied for by the plasterers, and pay 10d. per hour in future. The men asked that the rules shall not be altered under a two years' agreement, but the masters demurred. They contended that in case bad trade came it would be a hardship on them to have to pay the full rate of wages, say, for twelve months. They thought three months sufficiently long. The men, however, would not budge from the two years' agreement, and as several of the masters have important jobs to finish for the season they eventually gave in, and the strike is therefore at an end.—*Fleetwood Express.*

ABERDEEN PLASTERERS.—The operatives having threatened to strike on the 21st inst., the employers, considering the present position of contracts, conceded the demand of the men for a rise of ½d. an hour in wages. The whole dispute is now at an end.

JOINERS AND GRANITE WORKERS, ABERDEEN.—The parties in the dispute in the joiner trade have failed to agree on the terms of a reference to the Conciliation Board. The masters object to the demand for an eight-hours day and for an advance of wages from 8d. to 9d. per hour being included. The workmen will, however, carry the whole case before the Conciliation Board, but the employers reserve power to act as they may consider necessary, whatever the finding may be. The offer of an increase in standard rate of wages from 6½d. to 7d. per hour, as from May 2, has been accepted by the stone-cutters in the monumental granite trade. It has also been agreed that granite polishers shall work only fifty-one hours per week, the same as stonecutters, and all questions as to the system and rate of payment for polishing are meantime held in abeyance.

TREATENED STRIKE OF LIVERPOOL JOINERS.—There is every likelihood that within two months Liverpool will be the centre of an exceedingly serious industrial dispute. The house joiners of Liverpool have just issued notices to the employers that unless on and after May 1 their rate of pay is increased from 9d. to 9½d. per hour, they will "come out." A feeling of antagonism has been created between the men and the masters, and it is authoritatively stated that the latter will notify their intention of reducing the present rate of remuneration to 8½d. per hour. Altogether there will be close upon 8,000 men affected if the dispute attains an acute stage; while a number of building enterprises of great compass will be delayed, and probably injured. Within the past two years hundreds of houses have been built in the south and south-east extremity of the city, and have become exceedingly popular. In view of that fact many property owners and builders have this year already commenced to construct upon open land innumerable houses. House joinering has consequently become a most favourable industry, and the men now realise the opportunity has come of pressing a claim which has for some time been under contemplation.—*Liverpool Courier.*

PAINTERS' STRIKE, AYR.—The operative painters in Ayr have come out on strike. It is stated that the men demand an advance of ½d. per hour on the present rate of wages, and also that a revision be made as to the charges when working in the country.

STRIKE OF BLYTH PAINTERS.—On the 15th inst. Blyth painters came out on strike to resist the introduction of a new code of working regulations which the Masters' Association gave notice would be put into force. There are several points in dispute, but the chief objection is taken to the number of apprentices proposed to be allowed. The question of wages is not involved in the dispute.—*Newcastle Chronicle.*

BUILDING TRADE DISPUTES IN BLACKPOOL.—The building trade of Blackpool is again seriously threatened. The plasterers have been out on strike for three weeks, demanding a rise from 9d. to 10d. per hour. The employers have yielded owing to the pressure of contracts. Bricklayers are getting 9d. but want 10d. They come out on May 1, and the employers are determined to hold out. The position is very serious, as there are scores of houses in course of erection, besides the Alhambra Buildings. —*Liverpool Mercury.*

LEGAL.

INFRINGEMENT OF ANCIENT LIGHTS AT NEWMARKET:

CASE IN THE COURT OF APPEAL.

THE case of Golding *v.* Wm. Reilly & Co. came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Rigby and Vaughan Williams, on the 22nd inst., on the appeal of the defendants from a decision of Mr. Justice Stirling in the Chancery Division. The action was brought by the plaintiff, the owner of certain premises in High-street, Newmarket, occupied by Mr. Wm. Cresswell, a milliner, to restrain the defendants from interfering with the plaintiff's ancient lights, the alleged obstruction by the defendants being due to their erection of certain new buildings on the site of the old "Greyhound Inn," at Newmarket. The light said to be obstructed had access, prior to the erection complained of, to (first) a dwelling-house and shop facing the High-street, and (secondly) to a slanting roof and shop in the rear, and (thirdly) to a house still further in the rear, now converted into a shop. In the course of 1896 the defendants began to pull down the "Greyhound Inn," and in October of the same year began to build the new hotel, which was the building complained of, with the result that the walls facing the plaintiff's premises had been raised 59 ft. from the ground. Mr. Justice Stirling, after hearing the evidence, came to the conclusion that the plaintiff's light had been substantially affected, and granted a mandatory injunction. He directed that the defendants must pay the costs of the action, except so far as they had been increased by the issue raised as to a small window at the back of the warehouse which costs the defendants would have as a set-off.

Upon the case being called on, Mr. Butcher, Q.C., appearing as counsel for the appellants (the defendants), after consulting with Mr. Macnaghton, Q.C., counsel for the respondent (the plaintiff), stated that it had been arranged that the injunction should be dissolved, and that the defendants should pay his learned friend's client a lump sum for the obstruction of light, such sum so paid to cover the costs both in that Court and in the Court below.

Their lordships assented to this, and an order was made accordingly.

THE ALLEGED INFRINGEMENT OF ANCIENT LIGHTS IN TUDOR-STREET, E.C.

THE case of the *Christian Herald* Company, Limited, *v.* Knight and others, which was reported in the *Builder* of the 19th inst., was again mentioned to Mr. Justice Romer in the Chancery Division last week. It will be remembered that the case came before the Court on a motion by the plaintiffs for an injuction to restrain the defendants from building so as to injure or obstruct the plaintiffs' lights at their premises in Tudor-street, E.C., and his lordship granted an interim injunction restraining the defendants over the 18th inst. from building so as to obstruct the light to six windows shown on the plan.

Counsel for the defendants now said that his clients were not ready with their evidence, and it had been arranged that the interim injunction should be continued over another week, the plaintiffs' undertaking in damages being continued, and the defendants also undertaking to file their evidence within a reasonable time.

Order accordingly.

BUILDING DISPUTE AT EAST FINCHLEY.

THE case of Brown *v.* Ball was mentioned to Mr. Justice North in the Chancery Division on the 18th inst.

Mr. Swinfen Eady, Q.C., said the case came before the Court on a motion by the plaintiff to restrain the defendant from erecting, or permitting to be erected, any building upon his land in Huntingdon-road, Bedford-road, or the Great North-road, East Finchley, in contravention of a covenant.

His Lordship: Is it a question of ancient lights?

Mr. Vernon Smith, Q.C. (appearing for the defendant): No, my lord; it is with regard to a covenant as to the building line. I am willing to give an undertaking, without prejudice to any question, to abide by the covenant until the trial, costs to be reserved.

After some discussion, this undertaking was accepted, and the matter upon that undertaking stood for trial.

MEETINGS.

FRIDAY, MARCH 25.

Architectural Association.—Mr. T. C. Cunnington on "Constructional Steelwork." 7.30 p.m.

Royal Institution.—The Dean of Canterbury on "Canterbury Cathedral." 9 p.m.

Institution of Civil Engineers (*Students' Meeting*).—Mr. H. O. Eurich on "Internal Governor Friction." 8 p.m.

SATURDAY, MARCH 26.

Architectural Association.—Spring visit to Lord Windsor's house, Mount-street. 3 p.m.

Royal Institution.—Mr. Lionel Cust, M.A., on "Portraits as Historical Documents; Portraits as Monuments." I. 3 p.m.

Sanitary Institute (*Demonstrations for Sanitary Officers*).—Inspection at the Sewage and Destructor Works, Ealing. 2.15 p.m.

Edinburgh Architectural Association.—Visit to the Museum of Science and Art, Chambers-street.

Perth Architectural Association.—Second visit to Congregational Church, Kinnoull-street. 2.30 p.m.

MONDAY, MARCH 28.

Society of Arts (*Cantor Lectures*).—Professor W. N. Hartley, F.R.S., on the "Thermo-Chemistry of the Bessemer Process." III. 8 p.m.

Sanitary Institute (*Lectures and Demonstrations for Sanitary Officers*).—Inspection at the Metropolitan Cattle Market, York-road, N. 3 p.m. Dr. Joseph Priestley on "Ventilation, Warming, and Lighting." 8 p.m.

TUESDAY, MARCH 29.

Institution of Civil Engineers.—Mr. E. W. Stoney on "Extraordinary Floods in Southern India; their Causes, and Destructive Effects on Railway Works." 8 p.m.

Society of Arts (*Applied Art Section*).—Sir Edward Maunde Thompson on "English Art in Illuminated MSS." 8 p.m.

Auctioneers' Institute.—Mr. Douglas Young on "London Traffic Problems, and their Solution." 8 p.m.

WEDNESDAY, MARCH 30.

Society of Arts.—Professor Silvanus P. Thompson F.R.S., on "Telegraphy Across Space." 8 p.m.

Builders' Foremen and Clerks of Works' Institution.—Quarterly Meeting of the Directors. 8 p.m.

Sanitary Institute (*Demonstrations for Sanitary Officers*).—Inspection at the Disinfecting Station, Lot's-road, Chelsea. 3 p.m.

THURSDAY, MARCH 31.

Sanitary Institute (*Lectures for Sanitary Officers*).—Mr. E. T. Hall on "Sanitary Building Construction." 8 p.m.

Society of Arts (*Indian Section*).—Mr. Henry Luttman-Johnson on "The Earthquake in Assam." 4.30 p.m. Meeting to be held at the Imperial Institute.

Society of Antiquaries.—8.30 p.m.

Royal Institution.—Professor J. A. Fleming, M.A., on "Recent Researches in Magnetism and Diamagnetism." V. 3 p.m.

Institution of Civil Engineers.—Students' Visit to the Great Central Railway Works, including the Terminus. Assemble at 210, Marylebone-road. 2.30 p.m.

FRIDAY, APRIL 1.

Institution of Junior Engineers (*Westminster Palace Hotel*).—Mr. J. T. H. Burrell on "Mechanical Refrigeration." 8 p.m.

SATURDAY, APRIL 2.

Architectural Association.—Fifth Spring Visit, to New Public Baths and Free Library, Pitfield-street, Shoreditch. 2.30 p.m.

Institution of Junior Engineers.—Visit to the Thames Ironworks, Blackwall. 11 a.m.

Royal Institution.—Mr. Lionel Cust on "Portraits as Historical Documents; Portraits as Monuments." II, 3 p.m.

British Institute of Certified Carpenters.—Annual Dinner at the Bridge House Hotel, London Bridge, at 6 p.m.

RECENT PATENTS:

ABSTRACTS OF ACCEPTED SPECIFICATIONS.

Open to opposition until May 2.

[1897.] 4,608.—WIRE FENCING STRAINER: *T. Awdry.*—A spool tapering to one end between its flanges has square ends, outside the flanges, placed across one another; a key to fit over the square ends, and flat along one edge, is placed over the end when the wire is wound tight with its flat side against the post to prevent slackening.

4,638.—ATTACHING DOOR-KNOBS TO SPINDLES: *G. Beck.*—The use of screws or washers is dispensed with by means of a T or cross-shaped pin and a slotted and holed plate fixed to a revolving rose on the knob, or a loose slotted and holed plate can be used for any ordinary knob-rose.

4,818.—TEACHING MODEL DRAWING: *J. Tomlinson.*—The apparatus consists of a skeleton frame of metal or wire around whose edge is soldered a long spiral spring of small wire, instead of acting as a spiral spring it forms a succession of independent single springs, of which any two together may form a clip spring—thus a piece of string can be placed in any position across the frame and the model's outline can be delineated.

5,607.—MANUFACTURE OF WHEELS, PULLEYS, &C.: *W. Malam.*—Two circular plates clamp the disc of which the wheel is to be formed, their outer edges being so shaped as to form together a circumferential groove of the section required for part of the wheel's rim, with a roller carried by a rotating frame and bearing against the edge of the disc, and caused gradually to approach the disc's centre and to roll or upset the required flange thereon as the plate carrying the upsetting roller rotates around the disc and clamping plates.

5,947.—SINK AND KINDRED SANITARY PIPES: *E. Evans.*—The inventor provides the outlet end of a sink or other pipe with a flap-valve, or loosely-hinged cover or lid, secured thereto by an adjustable attachment band or clip tightened up by nuts and bolts.

6,060.—SLIDING SASH WINDOWS: *A. G. Rider and E. Russel.*—The contrivance relates to that class of sliding-sash window wherein, when the window is closed, the upper sash is superposed upon and in the same plane with the lower sash; a part of the inside lining of the box frame is so made that it may be opened; in the upper sash the cord on either side is fixed to the centre of the frame by a plate let into the edge of the sash, in the lower sash the cord is fixed to an angle-iron plate at the bottom corner of the rail, the plate moving up and down a groove in the pulley stile; instead of the ordinary wooden parting slip, a wrought-iron angle-iron is provided for the lower sash, let in, and screwed to the pulley stile.

7,062.—BRICK-MAKING MACHINES: *T. Parker.*—For feeding the clay in a continuous mass or stream through the brick die or delivery tube there is provided a revolving drum whose periphery fits against the feeding trough; the drum has carriers within which turn either outwardly, or inwardly, in combination with a stationary cam, or cams, all being so arranged that as the drum revolves the carriers are caused to project into the feeding trough and carry the clay round and force it along the trough and through the die or tube, when the carriers reach the die or tube they turn inwardly.

7,169.—TROUGH CLOSETS OR LATRINES: *J. Shanks.*—The bottom of the trough is flat and rounded at the sides. The flushing water is made to enter through a transverse horizontal slot. The end of the trough at which the discharge takes place and the bottom are made with two concavities meeting in a middle ridge, and so cause the water to enter by two inlets.

7,200.—DRAIN CLEANSING MACHINE HEAD: *J. Ephraim.*—This consists of a spear-pointed metal end having a helical or screw blade, washers (preferably concave on their inner faces) grip the brush or plunger upon the reduced end of the rod section which is screw-threaded to allow of the use of different sizes of brushes and plungers.

9,206.—WATER-CLOSETS: *S. S. Hellyer.*—The inventor's object is to make a water-closet suitable for use in cases where it is desired to obviate the necessity of disturbing or penetrating the floor, *e.g.*, a fire-proof floor; the basin, or pan, is of only such a depth as will afford room beneath it, and between it and the floor, for the valve-box and syphon-pipe or trap. The support of the pipe or trap, together with its descending limb, are made circular in form, so that the relative position of the outlet end, of the basin, and valve-box can be adjusted to suit the position of the soil-pipe.

10,021.—PIVOTTED WINDOW SASHES: *J. Makinson.*—The sash may be revolved upon a vertical axis running centrally through it. Trunnions are attached to the top and bottom bars of the sash and rest in sockets in the frame, the sockets consisting of a bracket with a hinged cleat, which is secured by a screwed stud, and when opened allows removal of the window; the window can be kept open at any desired angle by a perforated quadrant, into which drops a hook or catch.

10,901.—COLOURED OR DECORATIVE EFFECTS ON PAPER OR OTHER SURFACES: *Soc. Anon. A. Roudillon et Cie.*—"When drops of oil fall on water they spread out, presenting beautiful interference colours, which, however, soon disappear. This invention relates to means of fixing these colours, so that they resist rubbing or other rough treatment." A solution is made of about 10 per cent. judea bitumen in crystallisable benzine, with the addition of a few drops of essence of lavender or spikenard; a drop of the solution is allowed to fall on water in a vessel having paper or other suitable receptive surface at the bottom, and gives colours which, on running off the water, become fixed on the paper or other surface; the paper should be coated with gum, such as gum tragacanth, previously immersed in a solution of ammoniacal zinc chloride and dried. The coloured pellicle can be formed more slowly if rectified benzine is used as a solvent, the addition of essence of turpentine will retard evaporation of the solvent; brilliancy of the colours is obtained by adding a little colophony dissolved cold, and kauri gum will increase the pellicle's elasticity.

25,454.—LEVEL FOR USE IN CONSTRUCTING IRRIGATION WORKS: *J. P. Guidoux.*—A level beam is jointed at one end to the frame, and carries at the other end an indicating plate which slides in a graduated part of one of the uprights of the frame, the beam and plate can be brought to the required degree by means of a screw; an air-drop level is supported between two pieces of wood, of which one is fixed whilst the other oscillates in the longitudinal direction of the apparatus, and is held by a cleat.

NEW APPLICATIONS.

For week ending March 12.

5,505, Gorse and Probert, a Wire Nail. 5,508, E. W. Richmond, Gas Fires or Stoves. 5,514, Job and Others, Machine for Bronzing Paper, &c. 5,515, G. C. Brown, Hinging for Sliding-window Sashes. 5,516, H. Hobson, Ventilated Siphon-traps for Water-closet Basins. 5,521, E. J. Coxhead, and 5,787, J. Markham, Chimney-tops and Cowls. 5,523, Boddy and Davidson, Method of Slating Houses and other Buildings. 5,535, C. Wittkowsky, Manufacture of Shaped Articles from Veneers. 5,538, L. J. Dedecker, 5,594, Schlüter and Lüdemann, 5,701, Clayton and Steward, 5,760, J. Main, 5,840, W. Rowbotham, 5,908, Vezin and Oudry, 5,956, Hutchinsons, 6,006, J. Percival, and 6,097, R. Paterson, Manufacture of Acetylene Gas. 5,541, E. B. Poyser, "A Window Safety." 5,548, F. J. White, Chimney-flues. 5,549, J. W. Moore, Joints between Lead and Pottery Pipes. 5,552, T. R. Waite, Drain-traps. 5,561, Brown and Adams, a Portable Air-pump. 5,565, Day & Others, Ladder-Trestles, &c. 5,569, Hufty & Caldwell, Iron Castings. 5,576, L. Labois, Rotary Engines for Ventilators and other Fluid-Propelling Apparatus. 5,589, F. J. Gibbons, Reversible-Window Fastenings. 5,596, S. Bergmann, Electric Arc Lamps. 5,612, L. Mondron, Decorating Glass Panels for Covering Walls, &c. 5,622, G. W. Beldam, Manholes, Inspection, and like Coverings. 5,624, G. T. Moore, Electrical Alarms. 5,628, Grimshaw & Barnes, Cover for Tanks for Sewage, &c. 5,630, Walker & Others, Machine for Boring Tapered Holes. 5,633, G. F. Matthewson, Drainage Syphon Traps. 5,636, Langs, a Hollow Spindle Lathe Head-Stock. 5,645, H. Lowe, Flues or Hot-Air Chambers for Oil Cooking-Stoves. 5,652, W. O. Bailey, for Shaping and Bevelling Wood, Glass, and other materials. 5,660, G. Hyde, Drain Holes and Gratings of Sinks, Drains, &c. 5,664, Langs, a Screw-Cutting Arrangement on Lathe Saddles. 5,668, H. Becker, Folding Doors. 5,671, Cameron & Others, Treatment of Sewage, &c. 5,672, O. Siedentopf, and 6,128, Ackroyd & Best, Miners' Safety Lamps. 5,676, Roche & Berns, Levelling Device for Use with Billiard and other Tables. 5,686, S. G. Brown, Dynamo-Electric Machines and Electro-Motors. 5,703-5, H. Pieper, Electrodes for Secondary Batteries or Accumulators. 5,706, R. and L. Curtis, Threading and Cutting-off Pipe. 5,720, R. O. Allsop, Gas and Petroleum Engines and Motors. 5,730, G. C. Watson, Roller-blind Furniture. 5,731, F. Greensill, an Oscillating Dustbin. 5,733, C. Lewis, Attachment to the Ends of Blade Frame of a Stone-sawing Machine. 5,755, W. A. Gill, Moulding and Pressing Bricks. 5,759, D. Roche, Shoots and Buckets for Cranes, &c. 5,762, J. Russell, Files. 5,769, Askham and Others, Grinding, Crushing, Pulverising, Disintegrating, and the like Machines. 5,772, G. H. Halliwell, Smoke-prevention Movable Furnace-grate. 5,777, Bradish & Edwards, Apparatus for Ridding Houses of Rodents. 5,793, Pitt and Others, for Working Grabs, &c. 5,809, T. Kolbe, Beam Compasses, Calipers, and the like. 5,822, C. R. Iorns, for Gripping Weight-carrying Cords. 5,843, G. M. Jackson, for Dealing with Molten Iron from the Blast Furnace for Use in Casting. 5,848, S. Cowper-Coles, Metallic Reflectors. 5,852, J. Kessell, Appliance for Use in Decorative and other Painting on Walls and Other Surfaces. 5,864, W. Nicol, Door and Lock Furniture. 5,873, Davison & Graham, Ladders, Gratings, &c. 5,896, M. W. Wragg, a Fire-Escape. 5,907, G. L. Verver, Fireplaces and Stoves. 5,915-6, H. R. Vidal, Colouring Matters. 5,928, A. Jensen, a Saw-Setting Implement. 5,944, S. O. Cowper-Coles, White Lead. 5,962, C. D. Holmes, a Winch Brake. 5,968-9, F. H. Collins, Indicating Fasteners for Lavatories, Water-Closets, &c., and Axle Pulleys and Rollers for Sashes, Shutters, Doors, &c. 5,983, E. Grice, Down-Draught Kiln. 5,986, T. Brindle, Plinths, Pedestals, &c. 5,987, J. Toussaint, Shaving Extractor or Roller Fixed in all kinds of Planes for Working Wood. 5,999, C. Hill, for Determining Automatically the Breaking Tensile Load and the Maximum Elongation at Fracture of Cloth, Thread, Twine, Leather, Wire, &c. 6,002, T. Bradley, "a Circuitous Mountaineering Tower." 6,009, F. Thomas, Drawing Models. 6,021, C. G. Chapman, Sash Fasteners. 6,026, Crowley & Preston, an Electric Drill. 6,063, E. Burton, Stone Paving. 6,091, J. Foster, Waste Water-Closets.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

March 9.—By INMAN & Co.

Kilburn.—12, Granville-rd., u.t. 64 yrs., g.r. 7*l.* ..	£305
Kentish Town.—6, Hanover-st., u.t. 58¼ yrs., g.r. 6*l.* 6*s.*, r. 30*l.*	275
9, Hanover-st., u.t. 67½ yrs., g.r. 6*l.* 10*s.*, r. 33*l.*	290
Maida Vale.—7A and 7B, Northwick-mews, u.t. 25 yrs., g.r. 15*l.*	430

By TYSER & Co.

Chiswick.—448, 452, and 454, High-rd., u.t. 97 yrs., g.r. 70*l.*, e.r. 305*l.*	3,295
Norwood.—29, 35, and 37, Penge-rd., u.t. 69 yrs., g.r. 25*l.*, r. 95*l.*	700

By C. P. WHITELEY.

Balham.—17, 18, and 19, Devonshire-rd., f., r. 108*l.*	1,450
Barnsbury.—58, Richmond-rd., u.t. 38 yrs., g.r. 7*l.*, r. 50*l.*	460

By DOUGLAS YOUNG & Co.

Penge.—119 to 131 (odd), Crampton-rd., f., e.r. 163*l.* 16*s.*	1,200
18, Woodbine-grove, u.t. 69½ yrs., g.r. 5*l.* 10*s.*..	105
Barnes.—Charles-st., "Westfield House," f., r. 40*l.*	600

By THE PREMIER LAND COMPANY (at East Ham).

Manor Park.—Little Ilford-lane, &c., 132 plots of building land, f.	8,114

By ALFRED RICHARDS (at Enfield).

Enfield.—1, 2, and 3, Lyster-cottages, f., r. 50*l.* 14*s.*	620
1 and 2, Chestnut-villas, f., e.r. 46*l.* 16*s.*	610
Enfield Highway.—1 to 10, Saville-row, f., r. 145*l.* 12*s.*	1,500

By STEPHENSON & ALEXANDER (at Pontypridd).

Cwmbach, Glamorgan.—"The Colliers' Arms" hotel, f.	970

By S. & G. KINGSTON (at Boston).

Leake, Lincs.—"Simmon House Farm," 217 a. 3 r. 5 p., f.	10,000

March 10.—By HENRY HENDRIKS (at Birmingham).

Bromsgrove Lickey, Worcs.—"High House Farm," 38 a., f.	1,250
A block of building land, 12 a. 0 r. 32 p., f.	400
Edgbaston, Warwick.—103, Gough-rd., u.t. 52 yrs., g.r. 8*l.* 11*s.* 5*d.*, r. 75*l.*	960
15, George-rd., u.t. 29 yrs., g.r. 3*l.* 12*s.* 6*d.*	630

By WILKINSON, SON, & WELCH (at Brighton).

Hove, Sussex.—38, Wilbury-rd., f.	1,850

By SALTER, SIMPSON, & SONS (at Attleborough).

Banham, Norfolk.—"Gray's Farm," 45a. 3r. 8p., f.; also two Common Rights on New Buckenham Common	195

By WALLIS, RIDDETT, & Co. (at Ventnor).

St. Lawrence, Isle of Wight.—"The St. Lawrence Hotel" and 1 a. 1 r. 6 p., u.t. 962 yrs., g.r. 11*l.*, r. 65*l.*	1,200

By FAREBROTHER, ELLIS, & Co.

Croydon.—175 and 177, London-rd., and 4 a., f. ..	6,000
Wood Green.—Trinity-rd., "The Fishmongers' Arms" public-house, f.g.r. 80*l.*, reversion in 62½ yrs.	3,200
Kilburn.—156, 158, and 160, High-rd., f., r. 170*l.*..	6,150

By NEWBON, EDWARDS, & SHEPHARD.

Bethnal Green.—13, 14, 15, and 16, Chester-st., f., r. 83*l.* 4*s.*	900
Barnsbury.—88, John-st., u.t. 46½ yrs., g.r. 4*l.* 4*s.*, r. 40*l.*	400
Caledonian-rd.—67 and 69, Winchester-st., u.t. 35 yrs., g.r. 16*l.*	620
Kew.—1 and 2, Kew Gardens-rd., u.t. 60½ yrs., g.r. 24*l.*, r. 130*l.*	1,030
Balls Pond.—19 and 20, Canterbury-rd., u.t. 53½ yrs., g.r. 8*l.*, r. 56*l.*	580
Hoxton.—5 and 7, Southgate-rd., u.t. 20 yrs., g.r. 3*l.* 10*s.*, r. 60*l.*	450
St. Luke's.—11 and 12, Langton-st., u.t. 18 yrs. g.r. 6*l.*, r. 60*l.*	310
New Barnet.—Leicester-rd., a plot of building land, f.	150

By WOODS & SNELLING.

Hackney.—8, Banbury-rd., u.t. 56 yrs., g.r. 5*l.* 5*s.*, r. 30*l.*	290

By C. C. & T. MOORE.

Mile End.—3, 5, and 7, Old Montague-st., u.t. 44 yrs., g.r. 22*l.* 10*s.*, r. 221*l.* 16*s.*	2,210
6, 8, 8A, 10, and 12, Finch-st., and 7, 8, and 9, Frostic-pl., u.t. 44 yrs., g.r. 27*l.* 10*s.*, r. 366*l.* 14*s.*	3,900
3, 5, 5A, 7, 7A, 9, and 9A, Finch-st., u.t. 20 yrs., g.r. 35*l.*	1,300
8 to 12, Osborn-pl., and 1, 2, 3, and 4, Osborn-court, u.t. 20 yrs., g.r. 94*l.*, r. 418*l.*	2,000
Limehouse.—49 and 51, Gun-lane, f., r. 35*l.*	420
Stepney.—35, White Horse-st., f., e.r. 55*l.*	565

By STIMSON & SONS.

Westbourne-pk.—13 to 27 (odd), Aldridge-rd. villas, u.t. 58¼ yrs., g.r. 80*l.*, r. 480*l.*	4,190
17, Great Western-rd., u.t. 58¼ yrs., g.r. 7*l.* 10*s.*, e.r. 60*l.*	500
Great Western-rd., two blocks of stabling, u.t. 58¼ yrs., g.r. 12*l.*, e.r. 30*l.*	565
Stroud Green.—44, Ridge-rd, u.t. 85 yrs., g.r. 7*l.*, r. 42*l.*	400

Haggerston.—27, 28, 29, and 30, Dunston-rd., f., r. 78*l.* £780
Bromley.—41 to 49 (odd), Botolph-rd., u.t. 64 yrs., g.r. 17*l.* 15s. 520
Norwood.—219, Gipsy-rd., f., r. 50*l.* 730
Poplar.—18, 20, 26, and 28, Gaselee-st., f. 430
Brixton.—47, Knowle-rd., u.t. 64 yrs., g.r. 5*l.* 10s., e.r. 38*l.* 305
Kilburn.—11, Netherwood-st., u.t. 99 yrs., g.r. 10*l.*, r. 52*l.* 260

By ERNEST OWERS (at South Hampstead).

Hampstead.—11 and 13, Gladys-rd., u.t. 93 yrs., g.r. 16*l.*, r. 80*l.* 815
9, 53, and 55, Agamemnon-rd., u.t. 87 yrs., g.r. 18*l.* 13s., r. 117*l.* 1,130
59, Achilles-rd., f., r. 42*l.* 535
26 and 28, Ulysses-rd., u.t. 82 yrs., g.r. 11*l.* 18s., r. 72*l.* 750

March 11.—By H. DUKE & SON (at Dorchester).

Dorchester.—Charles-st., 32 plots of building land, area 1 a. 2 r. 39 p., f. 1,760

By ANLEY & CO.

Streatham.—1, Mount Ephraim-rd., u.t. 56 yrs., g.r. 16*l.*, tithe 16s., e.r. 100*l.* 1,000
Brixton.—15, Crowhurst-rd., u.t. 54 yrs., g.r. 6*l.*, r. 48*l.* 460
Fulham.—25 to 33 (odd), Walham-av., u.t. 86 yrs., g.r. 26*l.* 5s. 350

By E. HOLSWORTH.

Lewisham.—34 and 36, Mount Pleasant-rd., f., r. 78*l.* 860
Homerton.—Crozier-ter., i.g.r. 8*l.*, u.t. 64 yrs., g.r. nil 225
Hackney.—114, Chalgrove-rd., u.t. 76 yrs., g.r. 2*l.* 180
Stoke Newington.—139, Albion-rd., f., r. 36*l.* 460
Hoxton.—24 to 30 (even), Coronet-st., u.t. 66½ yrs., g.r. nil 1,060

By MOSS & JAMESON.

Bexhill, Sussex.—Station-rd., a freehold building estate, 15¾ a. 18,000
Bermondsey.—150 to 156 (even) Weston-st., f., r. 150*l.* 16s. 1,850

By E. & S. SMITH.

Muswell Hill.—Muswell-rd., "Shirley" and "Park View," f., r. 83*l.* 1,335
Highbury.—23, Balfour-rd., u.t. 51½ yrs., g.r. 7*l.* 7s., e.r. 50*l.* 460

March 14.—By CLARKE & CO.

Kensington.—26, 28, 30, 32, and 34, Castletown-rd., u.t. 82 yrs., g.r. 70*l.*, e.r. 330*l.* 2,585

By E. H. HENRY.

Penge.—27, Moss Lee-rd., f.. r. 32*l.* 10s. 300

By J. W. KEMSLEY.

Ilford.—Ilford-lane, two blocks of building land, area 20 a. 3 r. 32 p., f. 9,300

By G. RAVENSHEAR.

Child's Hill.—1, 2, and 3, High-st., u.t. 67 yrs., g.r. 29*l.*, r. 155*l.* 1,925

By T. WOODS.

High Holborn.—No. 166, f.g.r. 65*l.*, reversion in 83 yrs. 2,000
No. 164, "The Two Brewers" p.-h., f., r. 85*l.*.. 3,000

By FORTESCUE & BRANSON.

Acton.—Berrymead-rd., f.g.r. 20*l.*, reversion in 85 yrs. 490
Vauxhall.—49, Auckland-st., u.t. 67 yrs., g.r. 5*l.* r. 64*l.* 4s. 590
Fulham.—64, Bramber-rd., u.t. 78 yrs., g.r. 7*l.* 15s., e.r. 50*l.* 175
Shepherd's-bush.—Rylett-cres., f.g.r. 24*l.*, reversion in 89 yrs. 690
29, Stronsa-rd., f., r. 60*l.* 895

By E. FERGUSSON TAYLOR (at New Barnet).

New Barnet, Herts.—Station-rd., "Knole Lodge," f., r. 30*l.* 380
1 to 4, Cashiobury Villas, f., r. 106*l.* 1,230
Lancaster-rd., six plots of building land, f. 465
Somers Town.—45 to 48, Barclay-st., u.t. 22¼ yrs., g.r. 10*l.*, r. 127*l.* 910

By SEXTON & GRIMWADE (at Hadleigh).

Roxford, &c., Suffolk.—"Till's Farm," 66 a. 0 r. 9 p., f. 1,150

By Messrs. SPELMAN (at Norwich).

Norwich.—7, St. Giles-st., f., r. 50*l.* 1,550
Upper Goat-lane, freehold printing office, two houses and range of warehouses, f., r. 25*l.* 870

March 15.—By DEBENHAM, TEWSON, & CO.

City of London.—27, 29, and 29½, Gracechurch-st., area about 2,100 ft., f., r. 660*l.* 25,000
St. James'.—62, St. James'-st., f., r. 240*l.* 8,100

By REYNOLDS & EASON.

Rotherhithe.—576, 578, and 580, Rotherhithe-st., f., r. 62*l.* 8s. 495
Soho.—8, Old Compton-st., f., e.r. 100*l.* 2,630

By BARTON, SMITH, & CO.

Sydenham.—Lawrie Park-rd., "Hawthorndean," f., e.r. 120*l.* 1,700
Streatham.—Babington-rd., eight plots of land, f. 1,210

By FULLER, HORSEY, SONS, & CO.

Strood, &c., Kent.—The property and assets of the Stevens Cask and Barrel Company, Limited, with the Letters Patent 450

By J. & R. KEMP & CO.

Euston-rd.—George-st., f.g.r. 22*l.*, reversion in 25½ yrs. 1,320
Stanhope-st., f.g.r. 39*l.*, reversion in 41 yrs. 1,250
Regent's Park.—2, Portland-terr., u.t. 2½ yrs., g.r. nil, r. 55*l.* 115
Caledonian-rd.—Bryan-st., i.g.r. 28*l.* 10s., u.t. 46 yrs., g.r. 8*l.* 335
Regent's Park.—Albany-st., i.g.r. 144*l.*, u.t. 26 yrs., g.r. 24*l.* 1,440
Marylebone.—Balcombe-st., i.g.r. 60*l.*, u.t. 23 yrs., g.r. 20*l.* 520
St. Pancras.—Charrington-st., i.g.r. 26*l.*, u.t. 33½ yrs., g.r. 2*l.* 290
Hampstead-rd.—Drummond-st., i.g.r. 97*l.* 16s., u.t. 25½ yrs., g.r. 30*l.* 800

By CHINNOCK, GALSWORTHY, & CHINNOCK.

Drury-lane.—17, Betterton-st., f., r. 50*l.* 1,170
High Wycombe, Bucks.—43, Temple-end and "The Red Cross Knight Inn," f. 2,030
Crown-lane, "The Crown Inn," f. 570
Shepherds Bush.—Coningham-rd., &c., f.g.r. 60*l.*, reversion in 56 yrs. 1,560
Coningham-rd., f.g.r. 14*l.*, reversion in 74 yrs. .. 365
Cathnor-rd., f.g.r. 24*l.*, reversion in 56 yrs. 630
Cathnor-rd., f.g.r. 32*l.*, reversions in 55½ and 56 yrs. £820
Cathnor-rd., f.g.r. 66*l.*, reversion in 74 yrs. 1,630
Cathnor-rd., f.g.r. 54*l.*, reversion in 56 yrs. 1,365
Cathnor-rd., f.g.r. 15*l.*, reversion in 56 yrs. 360
Cathnor-rd., f.g.r. 96*l.*, reversions in 56 and 74 yrs. 2,410
Melina-rd., f.g.r. 132*l.*, reversion in 56 yrs 3,310
Melina-terr., f.g.r. 6*l.*, reversion in 74 yrs. 140

By J. J. KELF.

Walthamstow.—Greenleaf-rd., "Malvern House," u.t. 98½ yrs., g.r. 8*l.* 8s. 320
Leyton.—8 to 13 and 16, Belmont Park-rd., u.t. 97 yrs., g.r. 35*l.* 1,068
Finchley.—40, Park Hall-rd., u.t. 90 yrs., g.r. 5*l.*, r. 36*l.* 450
Crouch Hill.—18, Sparsholt-rd., u.t. 48 yrs., g.r. 5*l.* 10s., r. 32*l.* 245
Watford, Herts.—87 to 97 (odd), Southeron-rd., f. 1,140

By MORETON RICHES (at Clapham Junction).

Wandsworth.—14, 16, 18, and 22, Huntsmoor-rd., u.t. 92 yrs., g.r. 24*l.*, r. 112*l.* 950
81, 89, 93, and 95, St. Anne's Hill, u.t. 93 yrs., g.r. 26*l.*, r. 138*l.* 1,395
46, Tonsley-hill, f., r. 30*l.* 420
Clapham.—92 and 96, Elspeth-rd., u.t. 95 yrs. g.r. 16*l.*, r. 82*l.* 825

By HEPPER & SONS (at Leeds).

Leeds.—10, 11, 12, and 15, Kirkgate, also the "Golden Cock" Hotel, and warehouses, cottages, &c., adjoining, area 1,776 yds., r. 850*l.* 18s. 8d. 32,600

By BENTLEY & SON (at Askern).

Askern, Yorks.—"Moor House Farm," 27 a. 1 r. 0 p., f. 900

March 16.—By ROBSON & PERRIN.

Holloway.—1 and 2, Summerfield-rd., u.t. 74 yrs., g.r. 12*l.* 510
Stoke Newington.—133, Park-lane, u.t. 88 yrs., g.r. 1*l.* 15s., r. 40*l.* 400
Hoxton.—61, Rushton-st., u.t. 37 yrs., g.r. 4*l.* 15s., r. 32*l.* 290
Ball's Pond.—5, 5a, 6, and 7, Mildmay-av., u.t. 89 yrs., g.r. 35*l.* 450

By H. E. FOSTER & CRANFIELD.

Regent's Park.—5, Huntsworth-mews South, u.t. 23 yrs., g.r. 5*l.* 8s., r. 26*l.* 10s. 170
St. Pancras.—10, Woburn-buildings, u.t. 20 yrs., g.r. 10s., r. 50*l.* 270
Holloway.—284, 286, 288, and 290, Hornsey-rd., u.t. 53 yrs., g.r. 32*l.*, r. 200*l.* 1,390
2, Andover-rd., u.t. 53 yrs., g.r. 6d., e.r. 30*l.* .. 285
60 and 62, Victoria-rd., u.t. 36 yrs., g.r. 12*l.*, r. 56*l.* 415
58, Victoria-rd., with a cab-yard and farrier's shop, u.t. 36 yrs., g.r. 20*l.*, r. 90*l.* 750

By W. J. ORCHARD (at Berkhampstead).

Berkhampstead, Herts.—222 and 224, High-st., and ¾ of an acre, f. 1,250
An enclosure of meadow land, 3¼ a., f. 1,350

March 17.—By BUNCH & DUKE.

West Ham.—27 to 37 (odd), Ranelagh-rd., f., r. 111*l.* 16s. 1,050
2, Chaplin-rd., u.t. 83 yrs., g.r. 3*l.* 160
Bow.—58, Orwell-rd., u.t. 65 yrs., g.r. 3*l.* 200

By MATTHEWS & MATTHEWS.

Forest Hill.—1, The Glen, u.t. 62 yrs., g.r. 12*l.*, e.r. 60*l.* 350

By W. ROLFE.

West Smithfield.—Long-lane, "The Old Red Cow" p.h., f., r. 120*l.* 6,500

By STIMSON & SONS.

Kensington.—48, St. Mary Abbott's-ter., u.t. 61½ yrs., g.r. 13*l.* 1s. 3d., e.r. 80*l.* 115
Notting Hill.—2, Cambridge-gardens, u.t. 65½ yrs., g.r. 8*l.*, e.r. 60*l.* 415
Chelsea.—19, Ashburnham-rd., u.t. 79½ yrs., g.r. 7*l.* 10s., r. 50*l.* 550
27, Burnaby-st., u.t. 79½ yrs., g.r. 6*l.* 10s. 390
Stoke Newington.—53, Palatine-rd., u.t. 75½ yrs., g.r. 5*l.* 15s., e.r. 35*l.* 410
Walworth.—84, 86, 88, and 90, Date-st., and 11 and 12, Beckford-pl., u.t. 43 yrs., g.r. 40*l.*, r. 223*l.* 1,070
Camberwell.—79, Boyson-rd., u.t. 53 yrs., g.r. 5*l.*, r. 34*l.* 350

By H. J. BLISS & SONS.

Mile End.—71 to 85 (odd), Buxton-st., and l.g.r. 10*l.* 12s., u.t. 49 yrs., g.r. 32*l.* 10s. 2,625
Hackney.—49, Balcorne-st., f., r. 28*l.* 12s. 355
13, 14, and 15, Minson-rd., u.t. 48½ yrs., g.r. 10*l.* 3s. 790
Kentish Town.—83, Willes-rd., u.t. 55 yrs., g.r. 6*l.*, r. 34*l.* 300
Dalston.—87, Greenwood-rd., u.t. 63 yrs., g.r. 7*l.*, e.r. 42*l.* 325
Kingsland.—44, Stanley-rd., u.t. 63½ yrs., g.r. 3*l.* 15s., r. 26*l.* 300
Stratford.—10, Wadley-rd., f. 185
Mayville-rd., &c., three freehold building plots.. 250

By H. E. FOSTER & CRANFIELD.

Ayr, &c., Scotland.—A perpetual rent charge of 1,600*l.* 48,000
Bradfield, St. George, Suffolk.—Freehold rent charges of 44*l.* 7s. 4d. 1,050

March 18.—By BAKER & SONS.

Lambeth.—Whitgift-st., "Palace Buildings," &c., r. 270*l.* 1,740
Whitgift-st., f.g.r. 20*l.*, reversion in 90 yrs. 530
Fulham.—79 and 81, Horder-rd., f., r. 49*l.* 8s. 500
Horder-rd., f.g.r. 8*l.*, reversion in 98 yrs. 210

By HARDS & BRADLY.

Greenwich.—15, Ashburnham-grove, u.t. 49 yrs., g.r. 3*l.* 12s., r. 27*l.* 235
Dulwich.—37 and 39, Lordship-lane, r. 80*l.*; also l.g.r. 13*l.*, u.t. 66 yrs., g.r. 30*l.* 760

By MONTAGU & ROBINSON.

City of London.—17, Finsbury-pavement, f., e.r. 450*l.* 9,200
Holloway.—8, Tollington-pl., u.t. 62 yrs., g.r. 17*l.* 17s., e.r. 95*l.* 670

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G. ton	8/0/0	0/0/0
Teak, E.I....load	9/0/0	14/0/0
Sequoia, U.S.ft.cu.	1/8	1/10
Ash, Canada, load	2/17/6	4/2/6
Birch, do.....	2/17/6	4/10/0
Elm, do.....	3/12/6	4/12/6
Fir, Dantsic, &c..	1/11/0	3/11/0
Oak, do.....	2/4/0	3/4/0
Canada	3/15/0	5/0/0
Pine, Canada red	0/0/0	0/0/0
Do. yellow	2/5/0	4/5/0
Lath, Dantsic, fath	4/10/0	5/10/0
St. Petersburg..	5/0/0	6/10/0
Wainscot, Riga, &c., log.....	3/12/6	5/10/0
Odessa, crown....	3/12/6	5/10/0
Deals, Finland 2nd & 1st std 100	7/15/0	8/5/0
Do. 4th & 3rd ..	7/15/0	8/5/0
Do. Riga	6/5/0	7/5/0
St. Petersburg, 1st yellow	9/15/0	12/5/0
Do. 2nd yellow.	8/15/0	10/5/0
Do. white.....	8/5/0	10/5/0
Swedish	8/15/0	15/5/0
White Sea	9/5/0	15/15/0
Canada, Pine 1st	19/5/0	25/5/0
Do. do. 2nd	13/15/0	16/5/0
Do. do. 3rd, &c.	6/5/0	9/15/0
Do. Spruce, 1st	10/0/0	11/10/0
Do. do. 3rd and 2nd	7/10/0	8/10/0
New Brunswick	7/0/0	7/10/0
Battens all kinds boards, sq., 1 in. prep. 1st.....	9/6/0	17/0/0
Do. 2nd	8/0/0	13/6/0
Other qualities—	6/6/0	7/6/0
Cedar, Cuba, ft.	/4	/4½
Honduras, &c.	/3¾	/4½
Mahogany, Cuba	/5	/6½
St. Domingo, cargo av.	/4½	0/2/3
Mexican, do. do.	/3¾	/4
Tobasco, do. do.	/4	/5½
Honduras, do.	/4½	/6
Box, Turkey, ton	4/0/0	15/0/0
Rose, Rio	7/0/0	14/0/0
Bahia	6/0 0	12/0/0
Satin, St. Doming.	0/0/5	0/1/0

TIMBER *(continued)*.		
Satin, Porto Rico	0/0/6	0/1/6
Walnut, Italian ..	0/0/3	0/0/7
METALS.		
Iron—Pig, in Scotland .....ton	2/6/0	0/0/0
Bar, Welsh, in London	5/15/0	5/17/6
Do. do. at works in Wales	5/10/0	5/12/6
Do. Staffordshire, in London.....	6/5/0	7/10/0
COPPER—British cake and ingot	54/15/0	55/5/0
Best selected ..	55/15/0	56/0/0
Sheets, strong..	60/0/0	0/0/0
Chili bars	51/2/6	0/0/0
YELLOW MTL lb.	5d.	5¼d.
LEAD—Pig		
Spanish ....ton	13/0/0	0/0/0
English com. bands	13/5/0	0/0/0
Sheet, English 6 lbs. per sq. ft. and upwards ..	14/5/0	0/0/0
Pipe.....	14/15/0	0/0/0
ZINC—English sheet.....ton	20/5/0	0/0/0
Vieille Montagne	21/10/0	0/0/0
Spelter	18/8/9	18/11/3
TIN—Straits	65/8/0	0/0/0
Australian.....	60/0/0	60/10/0
English Ingots..	68/0/0	69/0/0
Banca	61/0/0	0/0/0
Billiton	59/15/0	60/0/0
OILS.		
Linseed .....ton	15/5/0	0/0/0
Cocoanut, Cochin	27/15/0	0/0/0
Do. Ceylon.....	22/0/0	0/0/0
Palm, Lagos	21/15/0	0/0/0
Rapeseed, English pale	27/10/0	0/0/0
Do. Brown	26/0/0	0/0/0
Cottonseed ref.....	14/5/0	15/5/0
Oleine.....	13/10/0	14/10/0
Lubricating U.S.	0/5/3	0/7/6
Do. Black	0/5/0	0/6/6
TAR—Stockholm barrel	1/0/0	0/0/0
Archangel	0/12/6	0/0/0
Turpentine	24/0/0	0 0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays*. N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

AUDENSHAW. — For laying an intercepting sewer from Station-road, to a point between Ashton Hill-lane and the canal, for the Audenshaw District Council. Mr. J. H. Burton, Surveyor, 2, Guide-lane, Hooley Hill:—

J. Smith.....	£880 15 0	T. Cooper	£594 0 0
R. Disley	830 0 0	W. Hurst, Droylsden*	592 6 3½
J. Chalmers.....	694 0 0	T. Rowlands	592 0 0
J. J. Blackburn	691 0 0	Matthews & Co.....	580 10 0
Underwood Brothers	657 0 0	R. C. Fish	572 10 0
Sharples & Moore ..	655 15 0	E. Cheetham.....	572 0 0
W. J. Wilkinson	630 10 0	W. J. Froom	566 0 0
Worthington & Pownall	627 5 0	J. Farrell	550 19 6
H. Davison	615 10 0	* Accepted.	

[Surveyor's estimate, £698 9s. 6d.]

AUDENSHAW.—For sewering a portion of Droylsden-road, for the Audenshaw District Council. Mr. J. H. Burton, Surveyor, 2, Guide-lane, Hooley Hill:—

G. Bell	£562 5 0	W. Hurst	£415 15 6
J. Cooper	545 8 0	H. Kinder & Son, Hooley Hill*	393 9 0
Worthington & Pownall	508 8 0	R. Fish	388 4 0
Etheridge & Clarke ..	502 13 0	J. Farrell	372 2 0
T. Rowlands	459 19 0	W. J. Froom.....	355 7 8
H. Davison	446 11 0	* Accepted.	

[Surveyor's estimate, £465 19s.]

BALLYNAFEIGH (Ireland).—Accepted for the erection of Methodist church, for trustees of same. Messrs. Forman & Aston, architects and civil engineers, Queen's-buildings, Royal-avenue, Belfast:—

Young & Dickson, Pakenham-street, Belfast £2,663

BRIDLINGTON QUAY.—For the erection of a pair of villas, for Mr. E. Rhodes. Mr. J. Earnshaw, architect, Carlton House, Bridlington Quay:—

R. Bailey	£1,775 0	E. Wilson (accepted) ..	£1,658 0
J. H. Hudson	1,698 10	[All of Bridlington Quay.]	

BRIDLINGTON QUAY.—Accepted for alterations, &c., to No. 17, Promenade, for Mr. Jones. Mr. J. Earnshaw, architect Wellington-road, Bridlington Quay:—

A. Gardam, Bridlington Quay £184 14

CHURCH ASTON (Salop).—For the execution of water supply works, for the Newport Rural District Council. Mr. W. Wyatt, engineer, Bryndwr, All Saints, Shrewsbury:—

For Pipes.

		Per ton.
D. Parsons & Sons, Pensnett, Dudley,*	4 in.....	£4 18 9
	3 in.....	5 0 0
	2 in.....	5 3 9

For Laying.

		Per yard.
A. & W. Massey, Newport, Salop,*	4 in.....	£0 1 4½
	3 in.....	0 1 2½
	2 in.....	0 1 1

* Accepted.

CORBRIDGE-ON-TYNE.—For additions, &c., to Sandhoe House, for Colonel Hornby. Messrs. Potts & Son, architects, 57, John-street, Sunderland. Quantities by the architects:—

Middlemiss Bros. ..	£1,938 6 0	W. Smith	£1,331 7 1
Kirk & Brown.....	1,730 0 0	E. Snowball	1,228 0 0
R. Hudson & Sons..	1,625 0 0	J. Civil	1,225 19 6
J. B. Stott.....	1,610 14 0	Elias Darlington, Hisham*	1,223 0 0
G. H. Robson	1,501 11 10	* Accepted.	

CROYDON.—For pulling down and rebuilding Nos. 20, 21, 22, 23, Surrey-street, Croydon, for Mr. J. Mann Taylor. Mr. J. William Stevens, architect, 21, New Bridge-street, City, E.C. Quantities supplied:—

White & Co.....£4,850	0 0	S. Hart	£3,587 0 0
Lorden & Son.....	4,444 0 0	A. Bullock.....	3,974 0 0
Potter	4,377 2 11	Saunders	3,909 6 0
Whitehead & Co....	4,325 0 0	Bryan & Son	3 895 0 0
W. Smith & Son....	3,990 0 0	E. P. Bulled & Co..	3,879 0 0
D. W. Barker	3,989 0 0	S. Page	3,720 0 0

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Water Supply	Cricklade and Wootton Bassett U.D.C.	21*l.* and 10*l.* 10*s.*	April 30
*Offices, Library Institute, Fire Station, and Public Baths	East Ham U.D.C.	100 guineas and 50 Guineas	June 24

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Fencing and Earthwork	St. Marylebone Gds.	A. Saxon Snell, 22, Southampton-bldgs. W.C.	Mar. 28
Rebuilding Unitarian Sunday School, Chapel-lane, Bradford	.....	Fimpsall & Clarkson, Archt. 7, Exchange, Bradford	do
*Repairs Private Roads	County Borough of Croydon	Borough Road Surveyor, Town Hall	Mar. 29
Sewerage Works	Runcorn U.D.C.	Surveyor, Town Hall	do.
Steel Bridge Girders (200 tons)	G.W.R. Co.	G. K. Mills, Sec. Paddington Station, W.	do.
Passenger Station, &c. Widney, near Solihull, Warwicks	do.	do.	do.
Broken Granite Slag	Luton T.C.	Boro Surv. Town Hall	do.
Paving School Yard, Townsendfold, Lancs.	Rawtenstall Sch. Bd.	Clerk, Sch. Bd. Offices, Cloughfold	do.
Four Houses, Sandy Pit-lane, Aldershot	T. Smith-Hughes	Friend-Lloyd, Archt. Aldershot	do.
Sewerage Works, Filter Tanks, &c. Aldenham	Watford R.D.C.	Surveyor, 8, Market-street, Watford	do.
Stoneware Pipes, &c.	Southend Corp.	A. Fidler, C.E. Boro Engr. Clarence-road	do.
Railway Stations, Bassaleg and Tydu, Mon.	G. W. R. Co.	Engineer, Theatre Royal-chambers, Cardiff	do.
Wesleyan Chapel, Pellon-lane, Halifax	.....	Utley & Co. Archt. 10, Waterhouse-st. Halifax	Mar. 30
Semi-detached Villa, Greenroyd Estate, Halifax	.....	G Buckley & Sons, Archt. Tower-chambers, Halifax	do.
Railway Station, Whalley, near Clitheroe	L. & Y. R. Co.	C. W. Bayley, Sec. Hunt's Bank, Manchester	do.
Warehouse, &c. Hollins, nr. Darwen	do.	do.	do.
Storm Overflow, Culverts, &c. Regent-road	Salford Corp.	S. Brown, Town Hall	do.
Additions to Workhouse	Ely Union	Gordon, Lowther, & Gunton, Archt. Finsbury House, Bloomfield-st. E.C.	do.
School, Burley-in-Wharfedale, near Leeds	.....	E. C. Brooke, 6, Huddersfield-rd. Brighouse	do.
Police Station, Pocklington, Yorks.	East Riding Standing Joint Committee	A. Beaumont, C.E. County Hall, Beverley	do.
Water Supply Works, Howgate, &c.	Whitehaven R.D.C.	G. Boyd, C.E. 31, Queen-st. Whitehaven	do.
Fireproof Mill, Barkisland, near Halifax	B. Taylor & Co. Ltd.	A. C. Williams, Archt. 29, Southgate Halifax	do
Road Materials	Litherland (Lancs.) U.D.C.	W. B. Garton, Surv 25, Sefton rd. Litherland	do.
Completing Passages, &c. Langton-rd and Phelps-street	do.	do.	do
Granite Setts, Kerbs, &c.	do.	do.	do.
Five Houses	Ripponden (Yorks.) Co-op. Soc. Ltd.	W. C. William, Archt. 29, Southgate, Halifax	do.
Widening Leeds and Wetherby Railway	N. E. R. Co.	H. Copperthwaite, Engr. N. E. Ry. Station, York.	do.
Cast Iron Sewage Pipes	Winchester Corp.	W. Bailey, Guildhall, Winchester	do.
Granite	Blaby (Leicester) R.D.C.	G. E. Bouskell, Queen's-chmbrs. Horsefair-street, Leicester	do.
*Making-up and Paving	Fulham Vestry	C. Botterill, Town Hall, Walham Green, S.W.	do.
Villa, Albert Promenade, Skircoat, Yorks.	.....	C. F. L. Horsfall & Son, Archt. Lord-st.-chambers, Halifax	Mar. 31
Two Houses, Raw-lane, Illingworth, Yorks.	.....	M. Hall, Archt. 29, Northgate, Halifax	do.
Road Materials	Ashton-under-Lyne Corp.	J. T. Earnshaw, C.E. Town Hall	do.
Lecture Hall, Killinchy, Ireland	.....	C. A. Aickin, Archt. 20, Rosemary-st. Belfast	do.
Additions to Schools, Lingard's Wood Bottom, near Huddersfield	.....	J. Kirk & Sons, Archt. Huddersfield	do.
Boiler, &c.	Sunderland Corp.	Borough Surveyor, Town Hall	do.
Cottage Hospital, Skipton, Yorks.	.....	E. C. H. Maidman, Archt 13, South Charlotte-st. Edinburgh	do.
*Building Materials and Tools	Prison Board	Prison Commission Office, Home Office, Whitehall, S.W.	do.
Roads, Keith Hall, Inverurie, N.B.	.....	W. J. T. Thompson, Kintore Estate Office, Montrose	do.
Granite Kerbing, &c.	Romford U.D.C.	Surveyor, Council's Offices, Romford	do.
Surveyor's Materials	Leek (Staffs.) U.D.C.	J. Myatt, Town Surv. Town Hall	do.
*Painting, Leeds and District	Midland Ry. Co.	Co.'s Archt. Cavendish House, Derby	April 1
House at School (New Inn)	Llanirhangel, &c. U.D. Sch. Bd.	D. J. Lougher, Archt. Pontypool	do.
Granite Road Metal (3,000 tons)	Oxenden R.D.C.	Surveyor, Corn Exchange, Market Harborough	do.
*Goods Shed, Nuneaton	Midland Railway	Co.'s Archt. Cavendish House, Derby	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered
Additions to Church, Ballybrown, Ireland	.....	W. E. Corbett, C.E. 28, Glentworth-st. Limerick	April 2
Granite (15,000 tons) Aylesbury	Bucks C.C.	R. J. Thomas, Surv. County Hall, Aylesbury	do.
Road Works, Great and Little Broughton	Cockermouth R.D.C.	J. B. Wilson, C.E. Cockermouth	do.
Wesleyan Chapel and Schools (heating, &c.)	Trustees	S. Selby 21, High-street, Buxton	do.
Rebuilding Whitehorse Inn, Southgate, Halifax	S. Webster & Sons, Ltd.	Jackson & Fox, Archt. 2, George-street, Halifax	April 4
Schools, Argoed	Bedwellby Sch. Bd.	James & Morgan, Archt. Charles-street Chambers, Cardiff	do.
Gas Purifier, &c.	Windsor Gaslight Co.	Secretary, 15, Victoria-st. Windsor	do.
School	Ardrossan Sch. Bd.	J. Armour, Junr. Archt. Irvine, N.B.	do.
Extension of Electricity Works	Leyton (Essex) U.D.C	H. C. Bishop, Engr. Cathall-road, Leytonstone	do.
Road Works (chalk cutting, &c.) near Petersfield	.....	W. J. Taylor, County Surv. The Castle, Winchester	do.
C. I. Drainage at Workhouse	West Malling (Kent) Union	H. Robinson, C.E. 13, Victoria-street, Westminster, S.W.	do.
Cottage Hospital, Bishop Auckland	.....	J. Garry, Archt. West Hartlepool	April 8
Sewerage Works, Back Wilberforce-street, &c.	Jarrow Corp.	J. Petree, Borough Surv. Town Hall	do.
Isolation Hospital	Aldershot U.D.C.	N. F. Dennis, C.E. District Council's Office, Aldershot	April 6
*Providing and Fixing Laundry Apparatus and Machinery	Wandsworth and Clapham Union	T. W. Aldwinckle, 1, Victoria-st. S.W.	April 7
Police Station, Newton-le-Willows	Lancs. C.C.	H. Littler, Archt. 68, Fishergate, Preston	do.
*Shedding, Offices, Stands, &c. for Agricultural Show	E Kent Agricultural Society	The Secretary, at Offices, Canterbury	April 9
Court House, Cookstown	Co. Tyrone Grand Jury	B. Stuart, Sec. Omagh	do.
*Bakery, Flour Store, and Shop	New Brompton Economical Society, &c.	E. J. Hammond, 111, High-street, New Brompton, Kent	April 18
Lock-up, Norton Woodseats, near Sheffield	Derbyshire C.C.	J. Somes Story, County Surv. St. Mary's Gate, Derby	April 27
*School Buildings, Farm Buildings, Dairy, and Workshops	Governors. Harper Adams Foundation	H. Teather, Andrews-bldgs. Queen-street, Cardiff	April 28
Salvation Army Buildings, Battery Green-road, Lowestoft	.....	A. Gordon, Archt. 101, Queen Victoria-st. E.C.	No date
Factory, &c. Selby	Inlaid Linoleum Co. Ltd.	J. F. Walsh, Archt. L. & Y. Bank-chmbrs. Halifax	do.
Hospital, Richmond	.....	Clark & Moscrop, Archt. Darlington	do.
Clothing Factory, Hudson-road, Burmantofts, Leeds	.....	Smith & Tweedale, Archt. 12, South-parade, Leeds	do.
School and Residence, Raveningham, Norfolk	N. H. Bacon	A. Pells, Archt. Beccles	do.
Stables, &c. Upton-lane, Forest Gate	Forest Gate Steam Laundry Co.	Reeves & Styche, Archts. 3, Gray's Inn-square, W.C.	do.
Church Restoration, Preston Wynne, Herefordshire	.....	G. H. Godsell, Archt Palace-chmbrs. Hereford	do.
Sheds, Fenches, Enclosures, &c. The Quarry, Shrewsbury	Shropshire Horticultural Soc.	Adnitt & Naunton, 9, The Square, Shrewsbury	do.
Wesleyan Church, Studland, Swanage	.....	Mr Damon, Retreat, Church Hill, Swanage	do.
Enlargement of St. John's Presbytery, Tadcaster	.....	A. D. Kaye, Archt. 71, Albion-st. Leeds	do.
Warehouse, near High-street, Llandrindod Wells	E. P. Careless	A. B. & W. Scott-Deakin, Archt. Oxford-chmbrs. Llandrindod Wells	do.
*Workshops	Woolwich Polytechnic	Church Quick & Whincop, William-st. Woolwich	do.
Additions to Schools, London and Brewery-roads	Southend Sch. Bd.	W. J. Wood, Archt. 26, Alexandra-st. Southend-on-Sea	do.
Drainage Works, Northants.	Hardingstone R.D.C.	W. Shaw, Engr. 17, The Drapery, Northampton	do.
Excavating Track and Laying Pipes, New Bolingbroke	Boston (Lincs.) Waterworks Co	Engineer, Waterworks Offices, Boston	do.
Business Premises, City-square, Leeds	Standard Life Assurance Co.	A. Neill, Archt. 18, Cookridge-street, Leeds	do.
Fifteen Houses, Meadow Hall, Sheffield	.....	H. W. Lockwood, Archt Palatine-chmbrs. Penstone-street, Sheffield	do.
Street Works	Sawley (Derby) Land Soc.	E. R. Ridgway, Archt. Long Eaton, near Nottingham	do.
Nine Shops, Public Hall, &c.	Long Eaton Working Men's Co-op. Soc. Ltd.	do.	do.
Villa, Stabling, &c. Castle Donington Street Works	Sawley Land Soc.	do.	do.
*Synagogue and House Attached	.....	do.	do.
		F. W. Woolf, 32, Jane-st. Commercial-rd. E.	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in.
*Two Assistants (Engineer's Dept.)	Willesden D.C.	85*l.* rising to 175*l.*	Mar. 29
*Surveyor's Temporary Assistant	Southport Corp.	2*l.* 10*s.* per week	April 5
*Temporary Draughtsman	Hackney Vestry	2*l.* 5*s.* per week	do.
*Clerk of Works	Pontefract R.D.C.	.....	April 7
*Assistant Surveyor and Building Inspector	Litherland U. D. C. (Liverpool)	110*l.* per annum	April 16

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p. iv.* *Contracts, pp. iv. vi. & viii.* *Public Appointments, pp. xvii. & xix.*

DARTFORD (Kent).—For extension of workhouse, for the Dartford Board of Guardians. Mr. G. H. Talt, architect :—

Gunning	£21,800	Knight	£18,245
Thomas & Edge	18,245		

DEVONPORT. — For alterations to business premises, 12, William-street, for Mr. A. Waterfield. Mr Edgar M. Leest, architect, 109, Fore-street, Devonport :—

A. N. Coles	£215 0	R. C. Parkhouse	£178 0
G. B. Turpin	180 0	W. E. Blake Plymouth*	153 0
T. Jenkins & Son	178 13	* Provisionally accepted.	

DUDLEY.—For additions to premises in Parsons-street, Dudley, for Messrs. Goodwin, Foster, Brown, Limited. Mr. F. Foster, architect, Leamington and Coventry :—

J. D. Ruffell	£2,577 1	C. A. Horton	£1,992 0
Love & Flint	2,340 0	W. Willetts	1,977 0
W. Holland & Sons	2,250 0	E. & J. Seckerson	1,976 0
E. J. Charles	2,195 0	H. Dorse & Co.	1,925 0
J. Dallow	2,195 0	J. H. Whittaker & Co.	1,890 0
J. Guest & Son	2,030 0	W. Deeley, Dudley*	1,850 0
		* Accepted.	

EDMONTON.—For new offices and board-room, for the Edmonton Board of Guardians. Mr. T. E. Knightley, architect :—

C. Wall	£6,317	Fairhead & Sons	£5,985
Knight & Son	6,275	Thomas & Edge	5,943
W. Lawrence	6,225	P. Hart	5,643

FAIRFIELD (Manchester).—For the erection of two shops on Manchester-road. Mr. J. H. Burton, architect, 2, Guide-lane, Hooley-hill :—

General Trades.

J. Whitehead	£1,565 10 0	E. Marshall	£1,203 0 0
A. Boardman	1,425 0 0	T. Dean	1,203 0 0
Fitton & Bowness	1,398 0 0	J. Robinson	1,195 0 0
G. Pike	1,393 0 0	J. Ridyard, Ashton-under-Lyne*	1,105 0 0
Wellerman Bros.	1,297 1 9	W. Hurst	1,183 4 4
H. Fielding	1,270 0 0	* Accepted.	

Plumbers' Work.

H. C. Hobson	£188 15 0	A. Heald	£168 0 0
R. H. Knowlson	180 0 0	J. H. Heginbottom	165 10 10
Burrows & Co.	175 0 0	P. Wills	164 0 0
G. H. Coop	170 0 0	H. Rigby	160 0 0
E. J. Bailey	169 2 6	G. Pybus, Openshaw*	163 0 0
		* Accepted.	

GRAVESEND.—For additions and alterations on the "Clarendon Royal Hotel," for Mr. R. L. Cosh. Mr. D. Carmichael, architect, London. Quantities supplied :—

Multon & Wallis	£1,125	H. W. Martin, Graves-end (accepted)	£1,025
Tuffee	1,090		

Bar Fittings, &c.

S. Ransom & Co., Kensal-road, London (accepted) £271 10

GREAT MARLOW.—For making new roadway and brewery-yard for Messrs. Thomas Wethered & Sons. Mr. J. H. Deacon, surveyor, Great Marlow, Bucks :—

W. Lee & Son	£586	H. Hill, Maidenhead*	£448
W. Lunnon	508	* Accepted.	

HASTINGS.—For the erection of boundary walls, Bulverhythe for the Corporation. Mr. P. H. Palmer, C.E., Town Hall, Hastings :—

C. Hughes, 19, East Ascent, St. Leonards £272 10

ILFORD.—For the erection of laundry buildings (exclusive of boiler-house, shaft, and fittings), for the South Essex Sanitary Steam Laundry, Limited. Mr. Horace J. Cropper, architect, Ilford :—

Snewin Bros. & Co.	£2,367	A. Miles	£1,779
J. Sparks & Son	2,227	W. Collins	1,685
W. Johnson*	2,052	* Accepted.	

[Architect's estimate, £2,000.]

LONDON.—For the erection of seven houses and two shops, Woolwich, for Mr. J. Hobson. Messrs. Church, Quick, and Whincop, architects :—

Proctor	£3,659	Sanford	£3,600
Kitley	3,630	Thomas & Edge	3,587
Ware	3,627		

LONDON.—For alterations to No. 66, St. John's-road, Clapham Junction, S.W., for Messrs. A. J. Smith & Co. Mr. J. H. Richardson, architect :—

Godfrey & Co.	£928	Turtle & Appleton	£770
Chamberlain	797	Gregory & Co.	767
Eddie	792	T. Bendon (accepted)	735

LONDON.—For rebuilding "Earl of Chatham" public house, at Thomas-street, Woolwich, for Mr. G. Coshfield. Messrs. Church, Quick, & Whincop, architects and surveyors :—

H. L Holloway	£2,820	Chapman	£2,689
E. Proctor	2,750	J. B. Sanford	2,659
Thomas & Edge	2,691		

LONDON.—For pulling down and rebuilding two shops, 6 and 7, Beresford-square, Woolwich. Messrs. Church, Quick, & Whincop, architects :—

Goad	£1,898	Kitley	£1,485
Proctor	1,633	Chapman	1,419
Thomas & Edge	1,500	Sanford	1,430

LONDON. — For erecting a pair of semi-detached houses, Alexandra-road, Muswell Hill, N., first of series, for Mr. E. W. Richardson. Mr. T. M. Garrood, architect, 172, Fenchurch-street, E.C.:—

Olver	£1,660	Jeffries	£1,491
Bronsden	1,654	H. L. Clark*	1,490

* Accepted.

LONDON.—For pulling down and rebuilding Nos. 40 and 41, Foley-street, W., for Mr. Thomas J. Boutting. Messrs. Clark & Hutchinson and Percy A. Boutting, joint architects, 28, John-street, Bedford-row, W.C. Quantities supplied :—

Holloway Bros.	£3,175	Smith & Co.	£2,987
Burman & Sons	3,121	Antill & Co.	2,970
Patman & Fotheringham.	3,003	Anley (accepted)	2,920

LONDON.—Accepted for alterations on the "Princess Royal," Sidney-square, Mile End, for Mr. Loneragan. Mr. D. Carmichael, architect :—

Messrs. S. Ransom & Co., Britannia Works, Kensal-road, W. £260

LONDON.—For alterations on the "Castle Tavern," Camberwell-road, S.E., for Mr. Henry Thomas May. Mr. D. Carmichael, architect. Quantities not supplied :—

G. & F. Kent	£1,320	T. Stevens	£1,247
H. Wall & Co.	1,190	S. Ransom & Co., Kensal-road (accepted)	2,220
A. A. Webber	1,273		

LONDON.—Accepted for alterations on the "Red Lion, Floral-street, Covent Garden, W.C.; for Mr. John M. Miller. Mr. D. Carmichael, architect :—

S. Ransom & Co., Kensal-road £175

LONDON.—For the construction of the Greenwich tunnel, for the London County Council :—

J. S. Pearson, & Son, Limited	£155 000	J. Mowlem & Co.	£119,732

LONDON.—For the supply of furnaces for the ss. *Barking*, for the London County Council :—

Thames Ironworks & Shipbuilding Co., Limited	£1,055 0	Fletcher, Son, & Fearnall	£806 0
Brown's Dry Dock & Engineering Co.	846 10	A. W. Robertson & Co.	690 0

MILES PLATTING.—For the erection of a misson hall and two shops in Oldham-road, Miles Platting, for the Committee of the Miles Platting Mission. Mr. F. W. Dixon, architect, Manchester :—

Lister, McCartney, and Lister	£3,202	S. Warburton	£2,790
A. B. Bullivant & Sons	2,875	W. A. Peters & Sons	2,761
T. Whitehead	2,797	Burgess & Galt, Ardwick*	2,682

* Accepted,

NEWLAY (Yorks).—Accepted for additions to house, Newlay, for Mr. W. Braithwaite. Mr. J. Peakman, architect, Hopwood Bank, Horsforth. Quantities by architect :—

Brick and Stone Work.—Maud & Horner, Horsforth	£233 0
Joinery.—Vickers, Bramley	142 0
Slating.—Season, Leeds	37 12
Plastering.—Mountain & Son, Leeds	25 0
Painting.—Clayton, Horsforth	14 0

Plumbing, glazing, gas-fitting, &c., by proprietor. Also glazed bricks, rolled steel joists, and various fittings.

PITSEA.—Accepted for erecting a cottage at Pitsea, Essex. Mr. Arthur T. A. Bowyer, architect, 92, Leadenhall-street, E.C. :—

Joseph Bayliss, Forest Gate, E. £310

SHEFFIELD.—Accepted for the erection of schools, Danielhill, Upperthorpe, for the School Board. Messrs. Hemsoll & Paterson, architects, 18, Norfolk-row, Sheffield :—

Aaron Moore, Sheffield £8,972

SHOOTER'S HILL (Kent).—For new sewers for the Plumstead Vestry. Mr. W. C. Gow, C.E., surveyor :—

Gilbert	£2,321	Bentham & Co.	£1,774
Adams	2,286	Wheeler	1,738
Gloof	2,166	Fry Bros.	1,665
Wadey	2,020	Brewer	1,644
Jackson	2,003	Thomas & Edge	1,618
Ellis & Co.	1,939		

WHATLINGTON (Sussex).—For erecting farm-house, stables, and farm-buildings. Messrs. Elworthy & Son, architects, St. Leonards-on-Sea. Quantities by architects :—

Eldridge	£2,175 0	Thomas	£1,805 0
Hatton	2,100 0	Eldridge & Cruttenden	1,800 0
Edwards	2,065 0	Gutsell	1,789 17
Harman	2,017 0		

[Architects' estimate, £2,150.]

LONDON SCHOOL BOARD TENDERS.

AT the last meeting of the School Board for London, the following lists of tenders were brought up by the Works Committee :—

ABBEY-STREET (Temp.).—Painting interior and exterior :—

H. Line	£111	Johnson & Co.*	£45
A. White & Co.	75		

ANN-STREET.—Painting interior :—

F. Britton	£542 17	W. Chappell	£310 0
T. Nicholson	400 0	W. Hornett	293 0
Gardner & Hazell	348 0	Johnson & Co.*	264 0
G. Barker	334 0		

ATLEY-ROAD.—Fixing additional boiler and providing and fixing coil in boys' department (standard III. class-room), and altering position of "Tortoise" stove in standard II. class-room :—

J. C. & J. S. Ellis, Ltd.	£42 0	Berry, Campbell, & Co.	£34 10
G. Davis	39 10	W. Simmons*	32 13
	36 0		

BASNETT-ROAD.—Painting interior :—

Holloway Bros.	£374 0	H. & G. Mallett	£239 0
Leathey Bros.	335 10	Rice & Son	229 0
Garrett & Son	280 0	E. Triggs*	211 0

BATTERSEA PARK-ROAD.—Painting interior :—

R. E. Nightingale	£509	Rice & Son	£467
E. P. Bulled & Co.	431	Garrett & Son*	403
J. Carmichael	409	F. G. Minter	395

BROCKLEY-ROAD.—Painting interior and exterior :—

W. Akers & Co.	£498 0 0	G. Summers	£282 3 6
G. Kemp	365 0 0	C. S. Jones	256 10 0
J. & C. Bowyer	343 0 0	E. P. Bulled & Co.	239 0 0
C. G Jones	207 9 7	W. Holding & Son*	216 0 0
W. Banks	189 14 6		

BROMLEY-ROAD.—Painting interior and exterior :—

G Summers	£317 7 6	C. G. Jones*	£265 16 0
W. Banks	293 14 6	C. S. Jones	248 5 0

BROOK-GREEN (iron buildings).—Painting interior and exterior :—

T. Cruwys	£157 0	F. T. Chinchen	£64 17
Leslie & Co., Ltd.	149 0	W. R. & A. Hide	52 10
E. Flood	83 0	Bristow & Eatwell	52 4

BUCKINGHAM-TERRACE.—Painting interior :—

Leslie & Co., Limited	£588 0	W. Chappell	£280 0
T. Cruwys	335 0	F. T. Chinchen	265 0
G. H. Sealey	317 0	W. R. & A. Hide*	255 0
Bristow & Eatwell	312 3		

CANAL-ROAD.—Painting interior :—

Collis Willmott	£424 0	G. Barker	£345 0
McCormick & Sons	380 0	Marchant & Hirst	393 0
Stevens Bros.	349 4	Grover & Son*	289 10

CAYLEY-STREET.—Painting interior and exterior :—

T. H. Jackson	£548 4	Johnson & Son	£430 10
E. Jackson & Son	492 0	Gibb & Co.	378 0
J. F. Holliday	441 7	A. W. Derby*	375 0
J. Kybett	432 0		

CHOUMERT-ROAD.—Painting interior and exterior :—

H. Line	£575 0	Rice & Son	£398 0
J. & C. Bowyer	432 0	W. J. Mitchell	390 10
G. Summers	413 10	W. Hornett	338 0
E. Triggs*	408 10		

COLLS-ROAD.—Painting interior :—

J. & C. Bowyer	£595 0	Rice & Son	£451 0
W. V. Goad	560 0	Jones & Groves	450 12
H. Line	490 0	W. Hornett*	381 0
Garrett & Son	452 0		

CRANBROOK-ROAD.—Painting interior and exterior :—

A. W. Derby	£773	Johnson & Co.	£590
Marchant & Hirst	688	W. Hornett	574
G. Barker	660	T. Cruwys*	572
S. H. Corfield	592		

"DEPTFORD PARK."—Painting interior :—

Jones & Groves	£396 0 0	S. Musgrove	£298 9 0
W. Banks	389 17 6	W. Holding & Son	298 0 0
C. Foreman	367 0 0	E. Proctor	280 0 0
E. Triggs	299 0 0	A. White & Co.*	253 0 0

EARL-STREET.—Painting interior :—

C. Foreman	£343 0 0	E. Proctor	£270 0 0
Thomas & Edge	325 0 0	G. Summers	265 4 0
W. Banks	314 19 6	W. Holding & Son*	258 0 0
J. H. Hodgin	272 10 0		

EAST-LANE.—Painting interior (enlargement) :—

T. Willson	£348 0	Holliday & Greenwood	£265 0
A. White & Co.	283 0	E. Triggs*	243 10
Johnson & Co.	265 10		

ELLERSLIE-ROAD.—Painting interior and exterior :—

Leslie & Co., Ltd.	£609 0 0	T. Cruwys	£327 0 0
Wm. Whiteley	319 15 0	W. Brown	293 12 0
Bristow & Eatwell	355 7 6	W. Chappell	260 0 0
G. Neal	340 0 0	W. R. & A. Hide	224 18 0
F. T. Chinchen	328 18 0	F. Chidley*	215 0 0

FLINT-STREET.—Painting interior (all departments) :—

J. F. Ford	£447 0	E. Triggs	£362 0
W. V. Goad	440 0	Johnson & Co.	345 10
Holliday & Greenwood	417 0	B. E. Nightingale*	317 0

GEORGE-STREET.—Painting interior :—

J. F. Ford	£485	B. E. Nightingale	£371
W. V. Goad	438	Johnson & Co.*	292

GORDON HOUSE. — Repairs on schedule on a running contract :—

Johnson & Co. ....+15 per cent. on the schedule of prices.
Speechley & Smith +15 " " " "
S. N. Soole & Son* +12½ " " " "

GRAVEL-LANE.—Painting interior (enlargement) and cleaning interior (old portion) :—

J. Kybett	£315	J. T. Robey	£285
T. Cruwys	297	G. Barker	275
D. Gibb & Co.	297	Johnson & Co.*	210

HANOVER-STREET.—Painting interior :—

F. Britton	£492 18	G. Barker	£446 0
E. Lawrance & Sons	490 0	Grover & Son	383 0
W. H. Wagstaff & Sons	473 0	Stevens Bros.	365 0
McCormick & Sons	456 0	Gardner & Hazell*	316 0

HITHER-GREEN.—Painting interior :—

Freeman & Son	£705 4	G. Summers*	£313 10
W. Banks	429 15	C. S. Jones	283 5
C. G. Jones	349 0		

HORSEFERRY-ROAD.—Providing an outside staircase in connexion with the boys' new entrance :—

Lathey Bros.	£175	F. G. Minter	£110
Peacock Bros.	137	W. Hammond*	100
E. Triggs	113		

HUGON-ROAD.—Painting interior and exterior :—

Leslie & Co., Limited	£862 0	C. Gurling	£430 0
E. Flood	486 15	F. T. Chinchen	410 0
Gregory & Co.	453 0	W. Hammond*	379 15

LAYSTALL-STREET.—Painting interior :—

Chase & Son	£637 18	W. H. Wagstaff & Sons	£299 0
Kiddle & Son	527 0	W. Hornett	278 0
F. Britton	520 0	Marchant & Hirst	277 0
T. Nicholson	325 0	Johnson & Co.*	247 0

MAIDSTONE-STREET.—Painting interior (new portion) and cleaning interior (old portion) :—

Snewin Bros. & Co.	£628 10	Marchant & Hirst	£347 0
Johnson & Co.	466 0	G. Barker	330 0
McCormick & Sons	450 0	S. H. Corfield*	313 0
Stevens Bros.	378 0		

MAWBEY-ROAD.—Painting interior :—

W. Banks	£388 17 6	C. S. Jones*	£316 5 0
Johnson & Co.	333 10 0		

MEDBURN-STREET (Mixed).—Reconstructing girls' and boys water-closets, and providing additional closets and drainage :—

Lilly & Lilly, Lim.	£1,237 0	T. Cruwys	£982 0
J. Grover & Son	1,218 0	H. Knight & Son	968 9
E. Lawrance & Sons	1,161 0	E. Triggs	933 0
J. & H. Bangs	1,075 0	Stevens Bros*	895 16

MIDWAY-PLACE.—Painting interior and exterior (enlargement) and cleaning interior (old portion) :—

Freeman & Son	£1,169 15 0	E. Triggs	£389 0 0
T. Willson	580 0 0	Johnson & Co.	385 0 0
A. White & Co.	392 0 0	W. Brown*	334 2 6

NAPIER-STREET.—Painting interior :—

McCormick & Sons	£493	Marchant & Hirst	£432
Stevens Bros.	478	E. Lawrance & Sons	425
J. Kybett	465	G. Barker*	420

OLDFIELD-ROAD.—Enlargement—Boys, 50; girls, 50; total, 100; with laundry centre; additional water-closets for boys and girls, and enclosing, draining, and tar-paving the additional land :—

		Extra for brickwork in cement.
Leslie & Co., Limited	£3,872 13	£39 10 6
R. A. Yerbury & Sons	3 698 0	59 0 0
W. Shurmur	3,527 0	59 0 0
Treasure & Son	3,482 0	54 0 0
L. H. & R. Roberts	3,462 0	57 0 0
J. Grover & Son	3,447 0	55 0 0
E. Lawrance & Sons	3 370 0	54 0 0
McCormick & Sons*	2,974 0	39 0 0

PRINCESS-ROAD.—Painting interior :—

Bristow & Eatwell	£377 13	F. T. Chinchen	£285 0
Stevens Bros.	309 0	W. Chappell*	230 0
Marchant & Hirst	297 0	W. Hornett	227 0
J. Simpson & Son	291 10		

PRITCHARD'S-ROAD.—Painting interior :—

W. Martin	£410 0 0	G. Barker	£323 0 0
McCormick & Sons	402 0 0	D. Gibb & Co.*	285 0 0
Collis Willmott	382 5 6		

QUEEN'S-GARDENS.—Painting interior and cleaning exterior :—

E. Flood	£172 11	Lathey Bros.	£108 0
Bristow & Eatwell	155 0	W. Hammond	97 5
C. Gurling	127 0	F. G. Minter*	94 0
O. Craske	111 0		

ROCKINGHAM-STREET.—Painting interior :—

W. V. Goad	£398 0	H. J. Williams	£352 0
Holliday & Greenwood	377 0	Star & Son	346 10
G. Brittain	368 0	B. E. Nightingale*	336 0
E. Triggs	367 0		

ROTHERHITHE NEW-ROAD.—Fixing hot-water radiators in connexion with existing low-pressure hot-water apparatus in laboratory, and providing and fixing shields to fireplaces :—

J. & F. May	£105 0	J. Bason	£80 0
J. Wontner-Smith, Gray, & Co.	98 0	W. G. Cannon & Sons	69 36
J. F. Clarke & Sons	81 0	J. Grundy	66 0
		Strong & Collings*	62 10

SCARSDALE-ROAD.—Painting interior and exterior :—

Freeman & Son	£1,199 11 0	Johnson & Co.	£540 0 0
B. E. Nightingale	565 0 0	Garrett & Son*	537 0 0
W. Banks	556 19 6		

SCAWFELL-STREET.—Painting interior :—

Collis Willmott	£479 10	A. W. Derby	£335 0
W. Martin	495 0	Marchant & Hirst	294 0
McCormick & Sons	398 0	S. H. Corfield*	270 0

SHERBROOKE-ROAD. — Re-constructing drainage of old school, and part of schoolkeeper's house, and connecting to the existing trough latrines :—

J. Garrett & Son	£1,421	Stimpson & Co.	£1,265
F. G Minter	1,298	Lathey Bros.*	1,232
W. Hammond	1,269		

SHILLINGTON-STREET.—Erecting centre for blind children :—

		Extra for brickwork in cement.
Rice & Son	£1,092 0	£26 10
F. & H. F. Higgs	1,075 0	25 0
J. Garrett & Son	1,060 0	24 0
J. F. Ford	1,014 0	25 0
Whitehead & Co., Limited	936 0	40 0
E. Triggs*	932 0	24 10

STOCKWELL-ROAD (Iron buildings).—Painting interior and exterior :—

Holloway Bros.	£62 0	G. Brittain	£27 10
C. Curd	57 10	E. B. Tucker*	24 15
T. Hooper & Son	57 0		

SUMNER-ROAD.—Painting interior of school; painting exterior and cleaning interior of P.T. centre. (The work to T.P. school to be executed during the summer holidays) :—

W. Banks	£858 16 6	Rice & Son	£672 0 0
W. Akers & Co.	847 0 0	C. S. Jones	637 10 0
Holliday & Greenwood	774 0 0	Jones & Groves*	644 2 0
W. V. Goad	753 0 0	Star & Son	612 10

TURIN-STREET.—Painting interior and exterior :—

J. Grover & Son	£846 0	S. H. Corfield	£723 0
J. Kiddle & Son	815 0	J. T. Robey*	676 35
A. W. Derby	739 0	D. Gibb & Co.	560 0

* Accepted.

UPTON HOUSE (truant school).—Cleaning interior :—

Snewin Bros. & Co.	£342 0	G. Barker	£195 0
J. T. Robey	222 10	G. Wales	191 0
Stevens Bros.	196 0	W. Silk & Son*	168 10

WALLER-ROAD.—Enlargement—Boys, 122; girls, 120; infants, 144; total, 384. The plans include additional w.cs. for all departments, &c. :—

		Extra for brickwork in cement.
F. & H. F. Higgs	£5 477 0 0	£59 0 0
Stimpson & Co.	5,408 0 0	56 0 0
Lathey Bros.	5,278 0 0	53 0 0
W. Whiteley	4,985 0 0	52 18 6
G. E. Wallis & Sons*	4,924 0 0	45 0 0

WARPLE-WAY.—Painting interior (old portion) :—

Holliday & Greenwood	£495	F. G. Minter	£378
Holloway Bros.	479	C. Curd	366
Gregory & Co.	402	E. P. Bulled & Co.*	342

WENLOCK-ROAD.—Providing and fixing hot-water coils in corridors, boys', girls', and infants' departments, and fixing tubular boilers :—

H. C. Price, Lea, & Co.	£97 13	G. Davis	£72 10
Stevens & Sons	88 0	Vaughan & Brown, Lim.	69 9
W. Simmons	79 14	J. Wontner-Smith, Gray, & Co*	62 0
W. G. Cannon & Sons	79 10		
J. C. & J. S. Ellis, Lim.	74 10		

WILLIAM-STREET.—Erecting manual training and science rooms; erecting two class rooms to accommodate thirty-two each, providing additional water-closets for girls; and enclosing, draining and tar-paving the additional land [Second competition]:—

		Extra for brickwork in cement.
W. Whiteley	£4,928 10	£82 0
Leslie & Co.	4,914 17	68 4
B. E. Nightingale	4,861 0	68 0
O. Craske	4,836 0	88 0
J. Carmichael	4,811 0	87 0
C. Wall	4,788 0	101 0
Lathey Bros.	4,690 0	85 0
Stimpson & Co.	4,657 0	98 0
H. Wall & Co.	4,618 0	74 0
E. Triggs	4,617 0	85 0
Kirk & Randall	4,565 0	79 0
Johnson & Co., Limited*	4,456 0	76 0

YERBURY-ROAD.—Painting interior:—

McCormick & Sons	£595 0	Stevens Bros.	£534 9
W. Hornett	585 0	Marchant & Hirst*	495 0
T. Cruwys	578 0		

Supply of wheelbarrows on a running contract:—

	Each.		Each.
O'Brien, Thomas & Co.	£1 10 6	F. Bird & Co.	£1 0 0
Pryke & Palmer	1 4 0	F. Braby & Co., Ltd.*	0 19 6
Nettlefold & Sons	1 1 0		

TENDER BOX:—

J. H. W. Martin	£14 5	T. Cruwys*	£10

* Recommended for acceptance.

Painting the exteriors of the following schools:—

ADYS-ROAD:—

H. Leney	£234 0	Jones & Groves	£161 11
H. Line	210 0	W. J. Mitchell	160 0
Star & Son	167 10	W. Akers & Co.	159 0
Frampton & Co.	165 0	J. F. Ford*	159 0

BALTIC-STREET:—

E. Lawrance & Sons	£170 0	Gardner & Hazell	£113 0
F. Britton	155 14	W. Hornett*	107 0
Johnson & Co.	139 0		

BELL-STREET:—

F. Chidley	£167 0	W. Hornett	£124 0
J. Simpson & Son	147 19	W. Chappell	110 0
Bristow & Eatwell	145 9	Marchant & Hirst	107 0
Wm. Whiteley	129 15	F. T. Chinchen*	105 0

BETTS-STREET:—

E. Jackson & Son	£162 0	A. W. Derby	£135
J. F. Holliday	155 5	D. Gibb & Co.	130
A. White & Co.	145 0	G. Baker	119
J. Kybett	144 0	S. H. Corfield*	89

CANONBURY-ROAD.—

W. H. Wagstaff & Sons	£121	J. Kiddle & Son	£91
McCormick & Sons	110	Gardner & Hazell*	88
W. Silk & Son	95		

FAIRFIELD-ROAD:—

J. F. Holliday	£145 0	Gibb & Co.	£96 0
E. Jackson & Son	133 0	S. H. Corfield	88 0
A. E. Symes	127 0	A. W. Derby*	84 0
G. Wales	109 9		

"FORSTER":—

F. Britton	£231 0	Bristow & Eatwell	£133 18
Gardner & Hazell	164 0	Stevens Bros.*	125 12
McCormick & Sons	140 0		

"FOX":—

"Unsigned"	£218 0	W. R. & A. Hide	£73 15
Lathey Bros.	154 0	W. Brown	67 10
Wm. Whiteley	98 10	Bristow & Eatwell	65 1[illegible]
F. Chidley	94 0	F. T. Chinchen*	58 1[illegible]

GALLEYWALL-ROAD:—

Johnson & Co.	£240 0 0	W. Banks	£175 14 6
A. White & Co.	235 0 0	E. Triggs	147 15 0
C. S. Jones	225 0 0	W. Brown*	135 10 0

LYHAM-ROAD:—

E. P. Bulled & Co.	+15 per cent. on schedule.	J. Carmichael	£120 0
Rice & Son	£163 0	Garrett & Son	118 0
H. & G. Mallett	162 0	E. B. Tucker	116 12
		E. Triggs*	112 0

MANTUA-STREET:—

B. E. Nightingale	£128 0 0	E. B. Tucker	£117 12 6
J. Carmichael	120 0 0	Garrett & Son	115 0 0
Rice & Son	119 0 0	E. P. Bulled & Co.*	113 0 0

MATTHIAS-ROAD:—

F. Britton	£298 15	McCormick & Sons	£166 0
Collis Willmott	225 0	Stevens Bros.	162 19
W. Martin	190 0	G. Barker	142 0
W. Silk & Son	187 0	S. E. Corfield*	140 0
G. Wales	183 10		

MORDEN-TERRACE:—

C. Foreman	£319 0 0	G. Kemp	£195 0 0
S. Musgrove	293 2 0	C. S. Jones	163 10 0
W. Banks	239 10 6	Jones & Groves*	159 0 0
G. Summers	242 2 4		

NUNHEAD-PASSAGE:—

H. Line	£222 0 0	G. Kemp	£150 0 0
G. Summers	208 18 0	W. Banks	139 10 6
W. Akers & Co.	164 0 0	Frampton & Co.	135 0 0
C. S. Jones	158 0 0	Lilly & Lilly, Ltd.	111 0 0

SUMMERFORD-STREET:—

G. Wales	£339 5	Johnson & Co.	£251 0
W. Silk & Son	297 0	G. Barker	245 0
W. Martin	275 0	J. Kybett*	233 0
Collis Willmott	270 0		

WATERLOO-ROAD:—

T. Hooper & Son	£187	B. E. Nightingale	£115
Lathey Bros.	179	J. L. Ford	111
W. V. Goad	125	Lilly & Lilly, Limited	97
E. Triggs	123	G. Brittain*	89

* Accepted.

TO CORRESPONDENTS.

W. W. (Below our limit).—J. D. (Amount should have been stated).—C. H. S. (Too late; next week).

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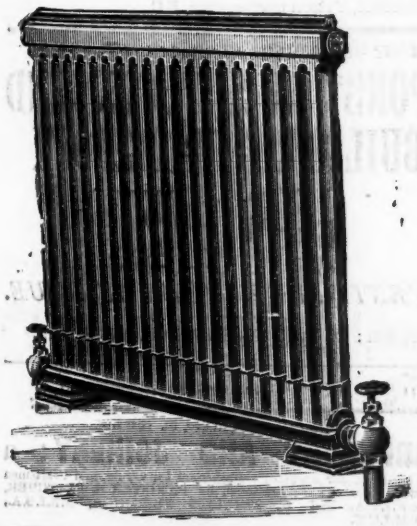

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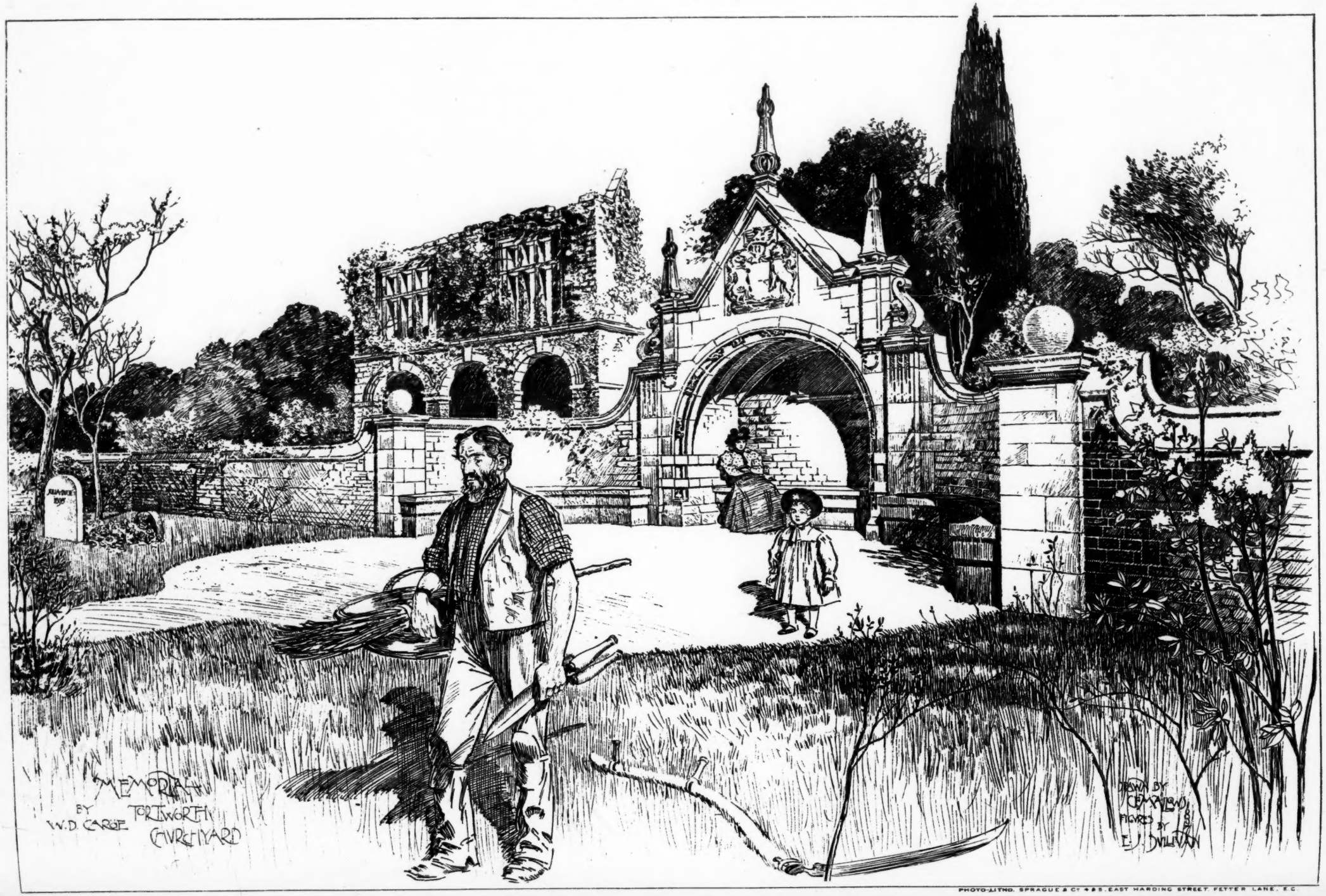

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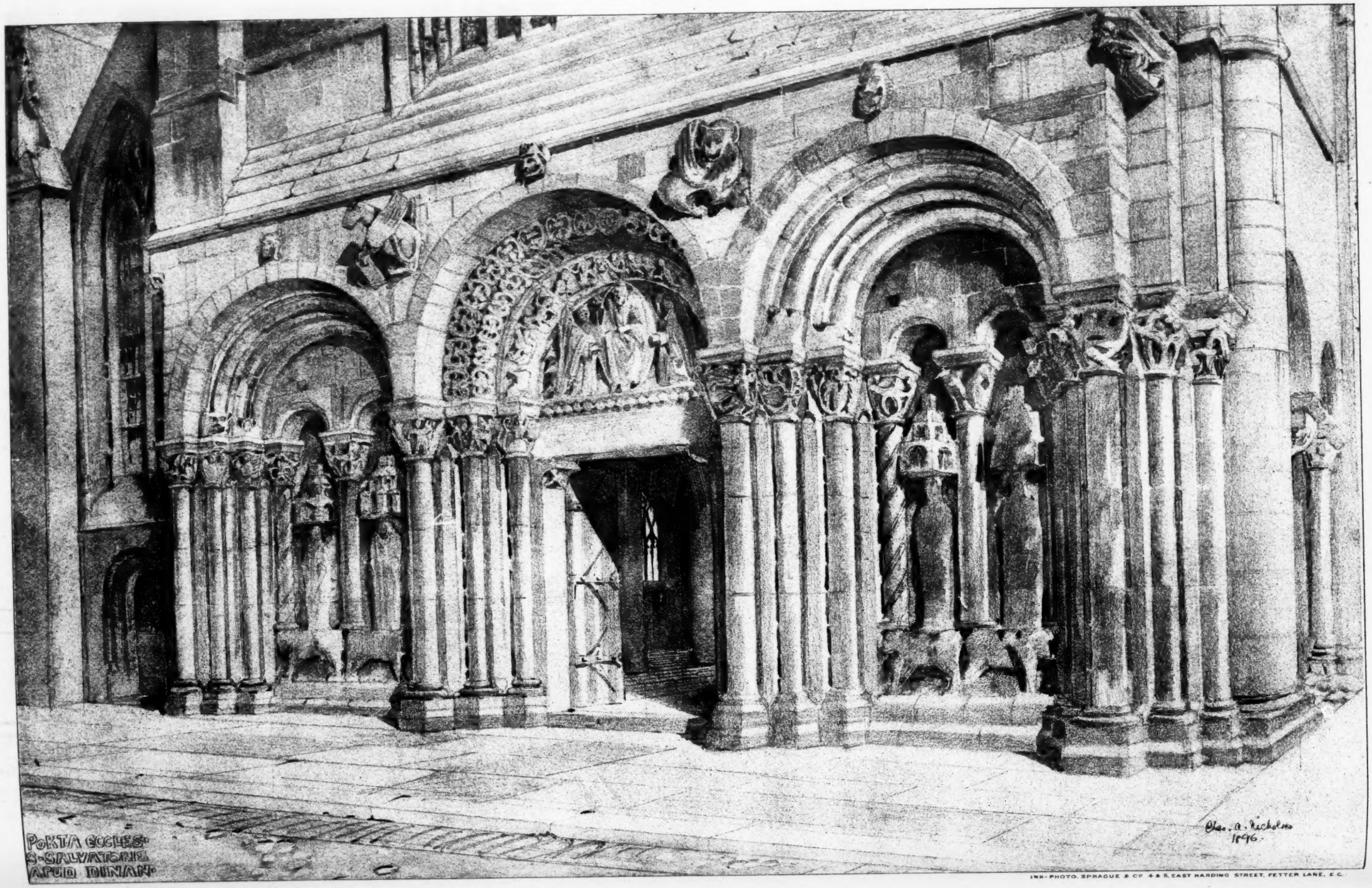

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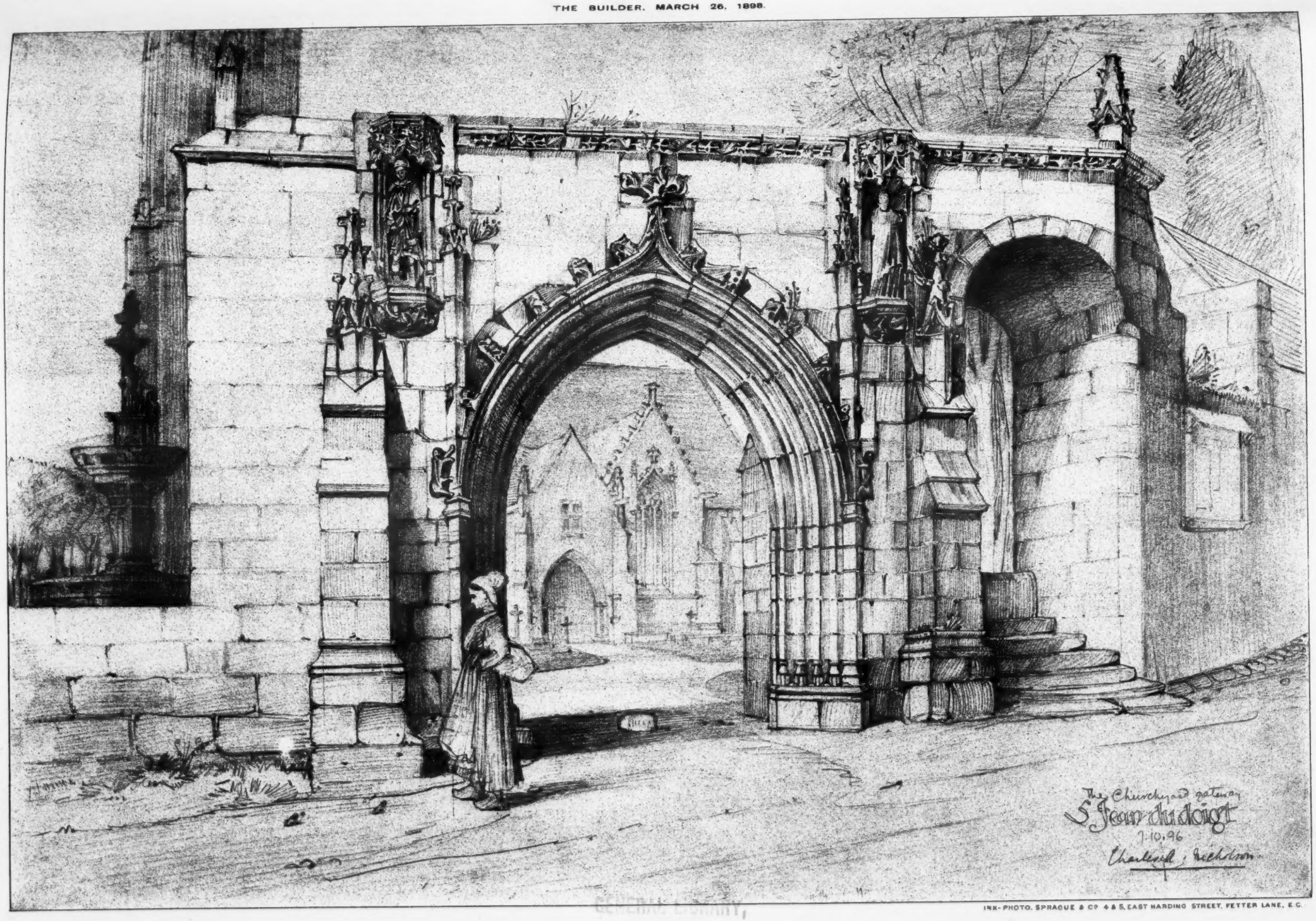

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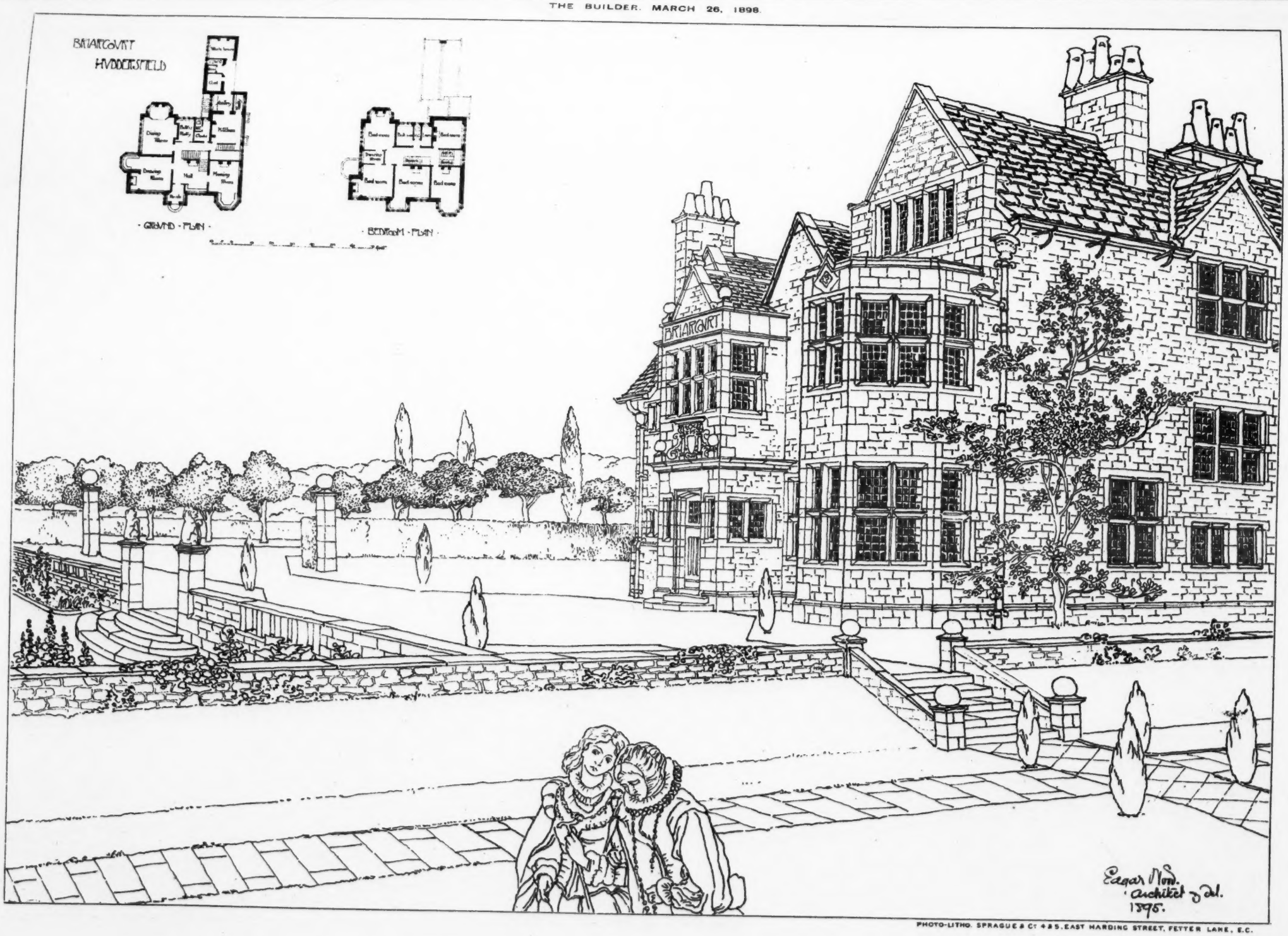

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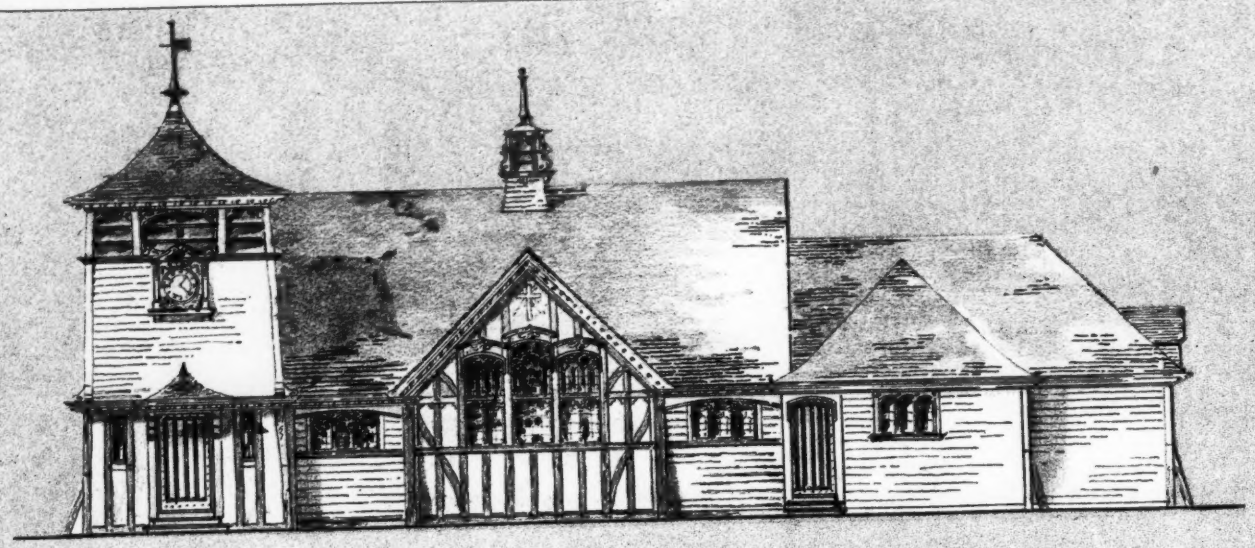

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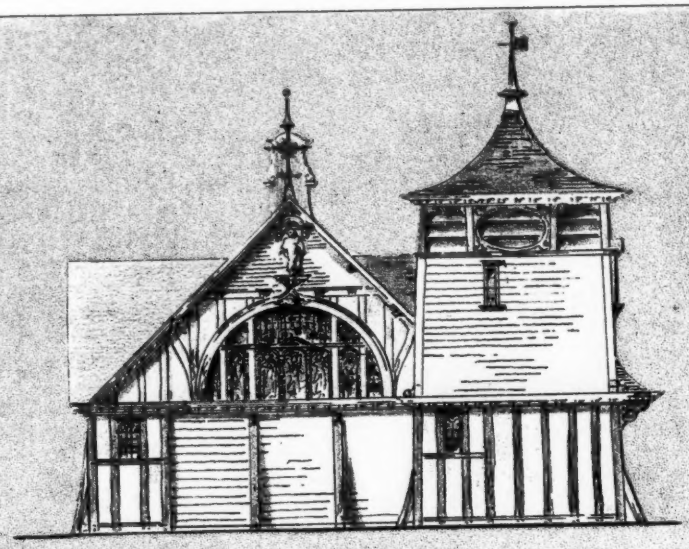

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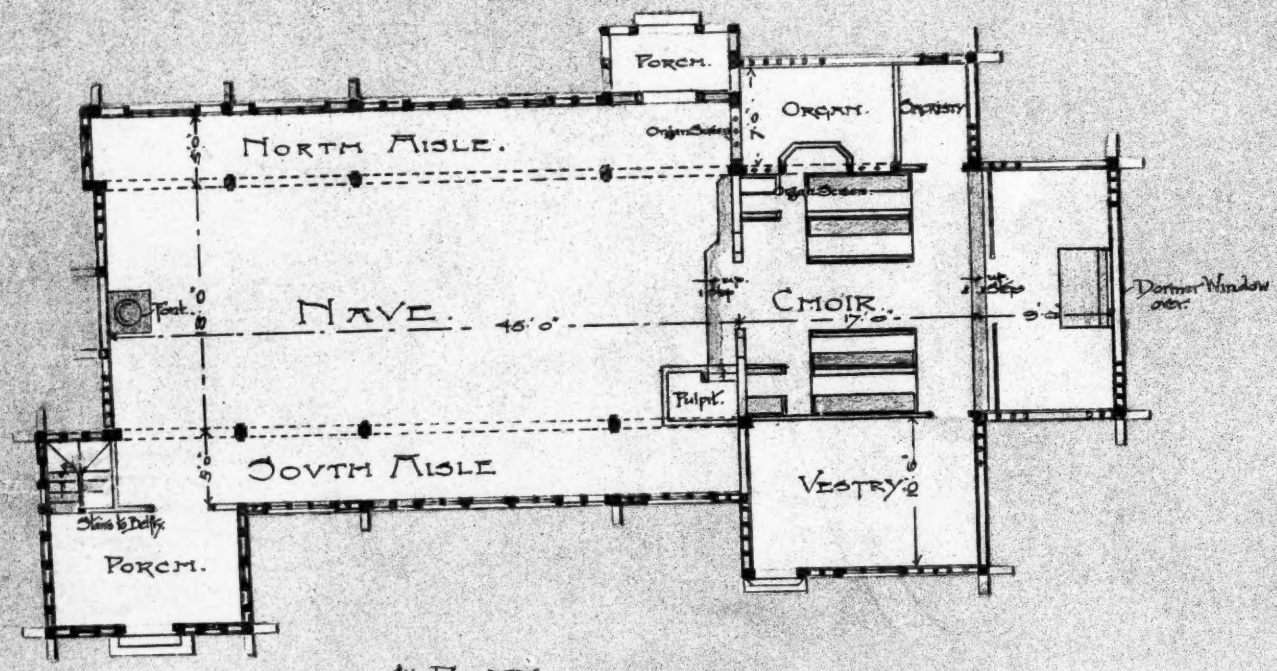

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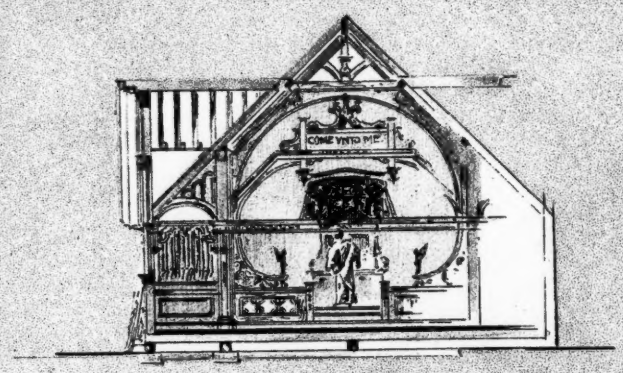

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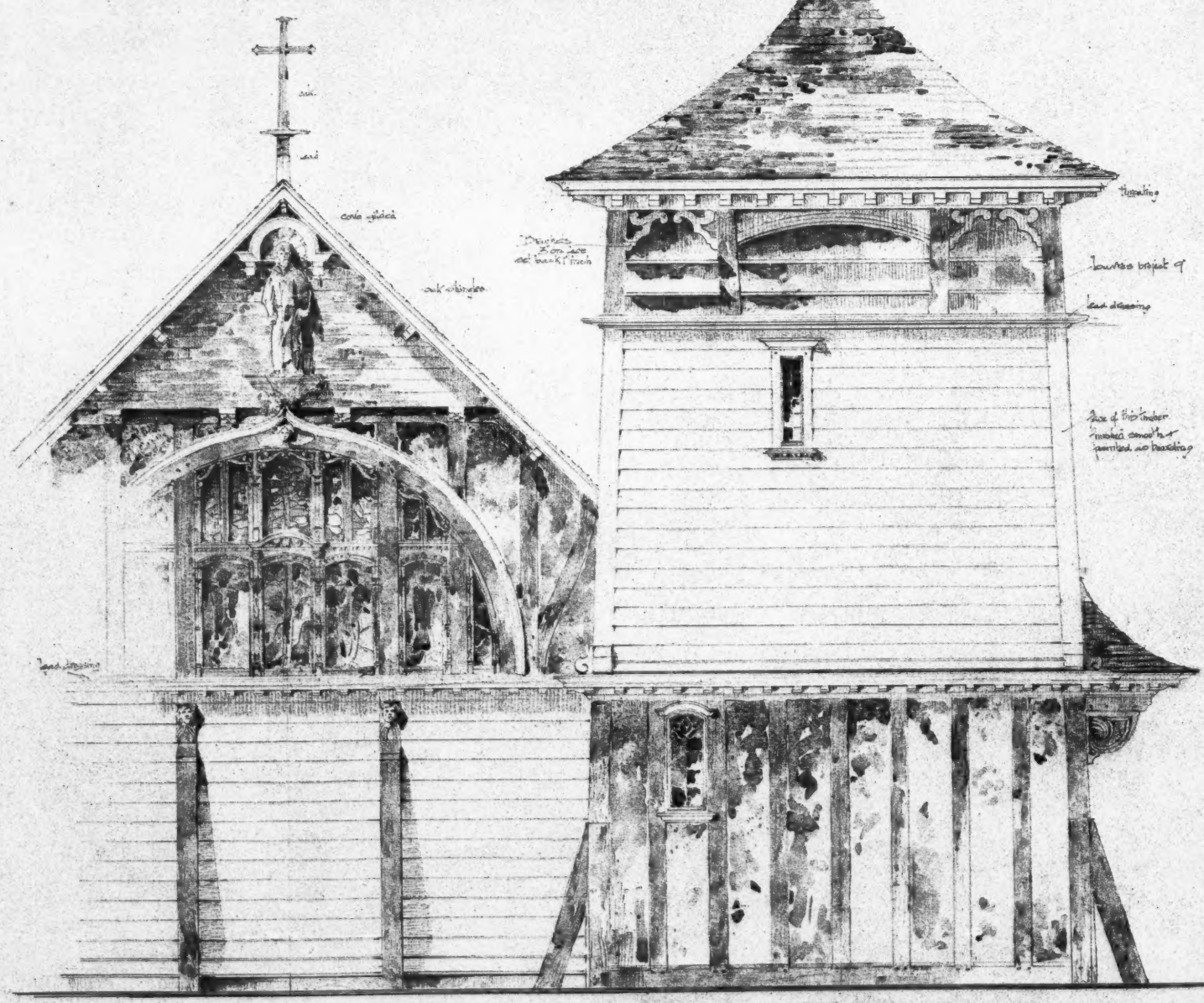

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